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MINUTES

OF THE

JOINT MEETING

IN THE MATTER OF AN OUTLET SEWER
FOR THE FOLLOWING MUNICIPALITIES:

NEWARK, SUMMIT, IRVINGTON, WEST ORANGE, VILLAGE OF SOUTH ORANGE, MILLBURN AND THE BOROUGH OF MAILSBURGH

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N.J. Joint outlet sewer commission
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PERIOD OF MAINTENANCE 1904-1915

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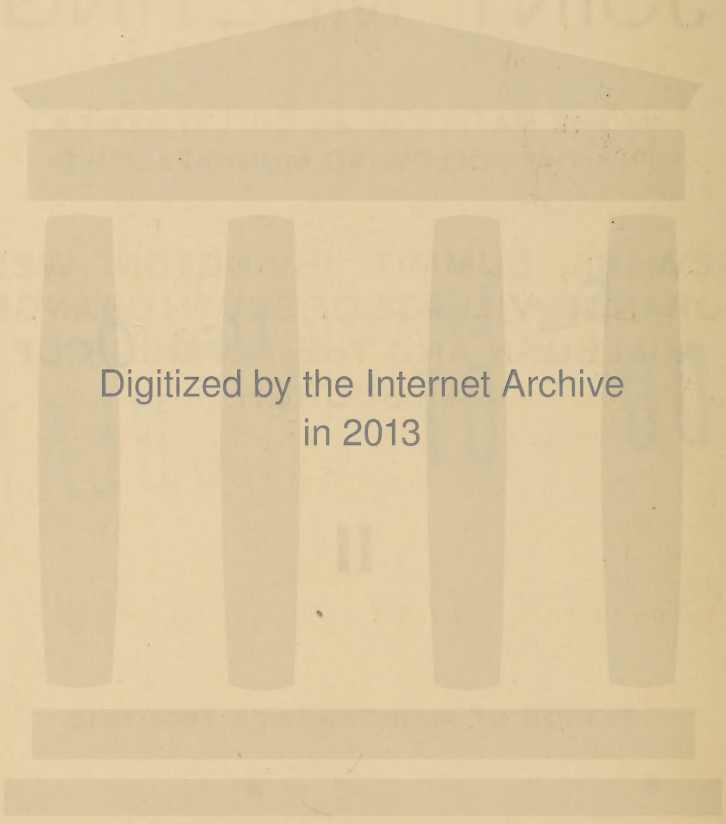

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OFFICERS AND MEMBERS OF THE JOINT MEETING

DURING THE

MAINTENANCE PERIOD, FROM JUNE, 1904, TO JUNE, 1915.

CHAIRMAN.

FRANCIS SPEIR, South Orange 1904-1915

VICE-CHAIRMAN.

ARTHUR R. DENMAN, Newark 1910-1913, 1915
E. L. SMITHERS, Millburn 1913-1915

SECRETARY.

E. D. TUTTLE, Irvington 1904-1907
ARTHUR TEPPER, Summit 1907-1915

TREASURER.

WM. ROLLINSON, West Orange 1904-1906
S. H. ROLLINSON, West Orange 1907-1915

COUNSEL.

ADRIAN RIKER, Newark 1904-1915

ENGINEER.

ALEXANDER POTTER, New York 1904-1915

MEMBERS.

Newark,	C. V. Baumann,	1904-1905
	Jos. S. Vinson,	1906
	Aug. F. Eggers,	1907-1908
	Arthur R. Denman,	1909-1912, 1915
	Chas. F. Kraemer,	1913-1914
Irvington,	Frank R. Sharp,	1904-1905, 1913
	A. E. Webb,	1906-1907
	Warren T. Frey,	1908
	Aug. F. Lacombe,	1909-1910
	D. H. Greene,	1911-1912
	Harry J. Stanley,	1914-1915
Millburn,	Richard Hopkins,	1904-1907
	Wellington Campbell,	1908
	E. L. Smithers,	1909-1915
	Wm. Byrd,	1915
South Orange,	Walter S. McCoy,	1904-1905
	E. S. Allen,	1906, 1911-1914
	Wm. T. Baird,	1906-1908
	T. G. Conway,	1908
	L. V. Blanchet,	1909
	F. J. Hill	1910
	G. F. Seymour, Jr.,	1915
West Orange,	John J. Kenney,	1904-1908, 1911-1915
	Max Brodessor,	1909-1910
Summit,	Chester N. Jones,	1904
	E. C. Votey,	1905
	Thos. M. Debevoise,	1906-1907
	O. B. Merrill,	1908-1911
	H. G. Clopper,	1912
	J. G. D. Knight,	1913-1915
Vailsburg,	Andrew Eschenfelder,	1904

In accordance with a motion passed at the meeting of December 16, 1915, in which the Secretary was directed to proceed with the reprinting of the second volume of the minutes, the following pages are presented comprising the minutes of the meetings from the beginning of the Maintenance Period in July, 1904, to the Annual Meeting of June 24, 1915.

EDWARD S. RANKIN,
Secretary.

Newark, N. J., January 3, 1916

MAINTENANCE PERIOD.

Joint Meeting of July 7, 1904.

Upon invitation of Chairman Speir the meeting was held in the South Orange Village Hall.

On roll call all municipalities were represented except South Orange.

Chairman Speir of South Orange being detained at home on account of sickness, Representative Chester N. Jones of Summit was chosen Temporary Chairman.

On motion of Representative Eschenfelder the minutes as recorded and printed of the meeting held June 4 were approved.

The Engineer presented the following report, which was read, and on motion received and placed on file:

"July 7, 1904.

"Joint Sewerage Commission, Newark, N. J.

"Gentlemen:—I beg to present my first month's report on the maintenance of the Joint Trunk Sewer since my appointment to this office.

"There have been so many matters to take my attention that it has been impossible to formulate the necessary rules and get out the necessary blank forms for the Inspector, that will be essential for the proper conduct of the work. However, it is necessary to make some report at this time due to the fact that Section 1 was accepted by the Board at the meeting held on the 9th of July, 1903, and under the contract with Mr. T. J. Shea the retained percentage must be paid to him on or before a year from that date.

"I have made an examination of the First Section, and have had the Inspector also go over the entire length of the sewer examining the sewer from end to end, by removing all manhole covers and buckets and entering into the sewer for the purpose of properly inspecting the same. We find that so far as the sewer is concerned everything is wholly satisfactory. The reference in the report of the Inspector to a number of buckets the lugs of which need lengthening is receiving my attention and they are now being remedied. I have a letter from the contractor advising me to have the bill for such work sent direct to him; the cost will not exceed $30.00.

"I therefore certify that the work is in such a condition that the three per cent. retained from the contractor be paid to him, less the amount of two or three bills which were certified to by me at the last meeting of the Board.

"We took special care to make inquiries of the property owners along Bayway as to whether they were satisfied with the condition of the street. It is the opinion of nearly every property owner on Bayway that we visited that the street is now in better condition than it was before the sewer was constructed.

"It is to be hoped that the City of Newark will enforce the plumbing rules in the 19th Avenue district and compel the connection with the sewer, so that a flow will be created in this section of the Joint Sewer. The flow is so small at present that the tendency to stoppage is very great, which, of course, will be obviated as soon as there is any reasonable flow in the sewer.

"During the coming month we hope to be able to set the majority of the automatic gauges, provided the regulation of the gauges, which will be conducted at my home, can be completed.

"The work done by the County in resurfacing South Orange Avenue has caused ten of our manhole covers to be lower than the new grade of the street. I have instructed Inspector Sanford to engage men to raise these manhole covers to the new grade; without this raising they are covered up and cannot be found when wanted. I presume that I have the sanction of the Board in incurring the expense involved in raising these manholes. This expense, of course, cannot be charged to the contractors, nor do I think the County would be willing to pay therefor.

"I present herewith monthly report of Inspector Sanford, also bill for his services and expenses amounting to $37.96, and bill for personal services from the 17th of June to the 30th of June. I also hand herewith bill of John Spies for services rendered before the appointment of Inspector Sanford on June 1, 2 and 3.

"The firm of Earle & Dougherty have not yet collected all their cleaning apparatus for my inspection and I am therefore not prepared to pass upon the value of it.

"Respectfully Submitted,

"Alexander Potter,

"Chief Engineer."

The Inspector presented the following report, which was read, and on motion received and placed on file:

"July 7, 1904.

"Mr. Alexander Potter, Chief Engineer Joint Sewerage Commission, South Orange, N. J.

"Dear Sir:—I present report of work done during the past month. I reported for work on June 20th, 1904, upon notification from you. I have kept a record of each day's employment and as soon as I am provided with cards I will transfer these records to the cards and transmit the same to you, and in accordance with your instructions I will notify each day the Secretary of the

Joint Sewerage Commission what sections I have examined, or upon what work I have been assigned by you.

"I have already gone over the greater portion of the entire length of the Joint Sewer, either in company with you or Mr. Goldfogle, your assistant engineer, for the purpose of familiarizing myself with the location and general features of the sewer.

"I have made critical inspection of Sections 1, 4 and 5, and have instructions from you to continue this inspection on the remaining three sections.

"The inspection of the construction of a large water main for the City of East Orange, N. J., under the Joint Sewer on Section 4 at the Rahway River crossing on South Orange Avenue required me to devote five days of my time to this work. The danger to the Joint Sewer was from two possible sources, first that due to the undermining of our sewer by the excavation for the water main; second, that due the collapse of the old stone arch bridge.

"In accordance with your instructions I have had the East Orange contractor wall up the space between the water pipe and the Joint Sewer, which, as you know, is a 24-inch cast iron pipe, and it has been left in a perfectly safe condition.

"My examination of the First Section shows that the flow in the sewer is perfect and no obstructions were found to exist. A number of lugs on buckets in the manholes need lengthening, and the surface of the street in a few cases could be improved. My inspection of the condition of the section was as thorough as could be made.

"I have also made a critical examination of the upper sections of Section 5 through Vailsburg and Irvington. The 19th Avenue and Grove Street sewer is in good order, very little water passing through it. I removed every cover and dumped every pail, in some instances finding that the pails required dumping more frequently than at other points. This is especially true on Springfield Avenue where the water runs down from the surface of the street and carries sand into the buckets.

"At your request I made a special examination of the manhole covers on South Orange Avenue and found that some of them should be replaced, as they are not heavy enough to withstand the steam roller which has recently been used upon the Avenue. I will furnish you with a list of these manholes that need the covers replaced.

"Respectfully submitted,

"F. Ross Sandford."

Representative Campbell of Millburn, for the Committee appointed at the meeting held June 5 to adjust the claim for damages on the property of W. C. Whittingham, reported that he had taken the matter up with Mr. Whittingham and had made a

satisfactory agreement with him, which was that the Joint Meeting was to construct two ditches to carry off the water, which could be done at a cost not to exceed $80.00, but to carry out this agreement it was found necessary to acquire a point of land from Chas. H. Beach and Lewis P. Taylor so as to give the brook a better course, and that such land had been secured for $75.00 and deed for same executed, and if the agreement was satisfactory to the Joint Meeting would go ahead and complete the work.

On motion the report was received and Committee instructed to proceed.

On motion the deed of Messrs. Beach and Taylor was received and referred to Counsel for approval and if found correct to be paid.

Report of the Committee on Furniture reported that they had met and fixed prices but had not as yet disposed of it and would report progress.

The Engineer stated that as he would soon have use for cleaning rods, etc., he would recommend the purchase of those of Earle & Dougherty that they would sell for $80.00.

On motion the Engineer was empowered to purchase same at a cost not exceeding $80.00.

The following resolution was presented:

"Whereas, The work on Section No. 1, Thos. G. Shea, contractor, having been completed and accepted by the Joint Body on July 9, 1903, and the contractor having been paid the whole amount of his contract amounting to $159,358.62 except 3 per cent., $4,786.16, which was to be retained for one year;

"And, Whereas, The period of twelve months having expired since the final acceptance of work done by Thomas J. Shea under contract dated February Twentieth, Nineteen hundred and two, for the construction of the First Section of the Joint Outlet Sewer, and the Engineer having reported that the work has been kept in complete repair and that he has caused to be expended in such repairs the sum of $38.29;

"Resolved, That there be paid to the said Thomas J. Shea the sum of $4,786.16, being the amount of the three per cent. (3%) of the gross amount earned by him under said contract reserved in accordance with the twenty-sixth section of his said contract, less the sum of $38.29 expended under the direction of the Engineer in keeping said work in repair during said twelve months since its final acceptance by the Joint Meeting."

The resolution was duly seconded and vote being taken was ordered paid, all municipalities voting aye.

Treasurer presented his bond for $5,000, which was received and referred to Counsel for approval.

The oath of office of Chairman Speir Secretary Tuttle and Treasurer Rollinson were received and filed.

The following communication from Hugo Winkler of 328 Lyons Avenue, Irvington, accompanied by a bill for $15, was read, and on motion was referred to the Engineer to make report at next meeting:

"Irvington, N. J., July 5, 1904.

"To the Council of the Town of Irvington.

"Gentlemen:

"In getting the permit to connect with the sewer in front of No. 328 Lyons Avenue, I was told that there was, and the map shows a stand pipe of 2 feet at the inlet, making the depth 8 feet from the surface. In making the connection we expected and prepared to find the inlet at that depth. Failing to do so caused cave ins and considerable trouble for which we were not prepared, causing the loss of 6 days' labor, besides pipe which was supposed to be there, therefore I present you with a bill for fifteen dollars, which about covers the extra cost we were put by having to put in said 2 feet of pipe. Hoping you will consider this subject favorably, I remain, yours respectfully,

"Hugo R. Winkler.

" 'Irvington, N. J., July 5, 1904.

" 'Town of Irvington to Hugo R. Winkler, Dr.

" 'For placing 2 foot stand pipe and inlet in sewer in front of No. 328 Lyons Avenue, fifteen ($15) dollars.' "

The Secretary stated that it had come to his knowledge that certain taps had been made without permits having been issued, and he was instructed to report any such violations of the rules to the Engineer, who should take such action to secure an enforcement of the rules he deemed necessary.

The following bills which had been approved by the Auditing Committee were read and ordered paid:

American Surety Co., Treasurer's bond	$ 20.00
E. D. Tuttle, moving safe	15.00
Grover Bros., printing	2.05
Sarah M. Davy, typewriting	3.00
N. Y. & N. J. Telephone Co.	1.11

F. Ross Sandford, salary as Inspector	37.96
W. B. Adams, salary as Bookkeeper	107.91
Alexander Potter, salary as Engineer	72.22
John Spies, salary as Inspector	10.50

There being no further business the meeting adjourned.

E. D. TUTTLE,
Secretary.

Joint Meeting of July 27, 1904.

Special meeting held this evening at the South Orange Village Hall.

Meeting called to order at eight o'clock P. M.

Roll called, all municipalities being represented except South Orange.

Chairman Speir of South Orange being absent, Chester N. Jones of Summit was chosen temporary chairman.

The Chairman announced the meeting was called for the purpose of receiving the report of the Committee appointed at the June meeting to engage an expert accountant and have the Treasurer's accounts examined and audited.

Chairman C. V. Baumann of Newark reported that the Committee had engaged Wm. C. Stainsby to make the examination, which he agreed to do at a cost not to exceed $250, as per the following letter:

"Newark, N. J., June 30, 1904.

"Hon. C. V. Baumann, Chairman Examining Committee,
Joint Sewer Commission.

"Dear Sir:—Confirming our conversation of this afternoon, I beg to say that the examination of your Treasurer's books will cost not to exceed $250 and possibly not more than $200.

"The work is quite extensive and will require a great deal of figuring because of the way the assessments are divided and it is a little difficult to say absolutely what it will be worth, but under no circumstances will it exceed the extreme amount mentioned above. Yours truly,

"WILL C. STAINSBY."

And would present the following report from the Expert, also a summarized report from Treasurer Phraner showing in tabulated

form the total cost of the sewer, the total cost section by section and the balance due on each section held in reserve:

"Newark, N. J., July 21, 1904.

"Hon. C. V. Baumann, Chairman Examining Committee,
"Joint Sewer Commission.

"Dear Sir:—Under your direction I have made a very thorough and careful examination of the Treasurer's books and beg to submit herewith my report. The Trial Balance is as follows:

Summit		$173,977.00
Newark		65,963.40
Irvington		106,694.50
West Orange		147,557.00
South Orange		139,876.20
Millburn		90,058.00
Vailsburg		68,873.90
Miscellaneous Expense	$ 275.00	
Preliminary "	2,413.04	
Printing, Stationery, etc.	1,144.87	
Advertising	9.30	
Rent	1,537.29	
Office Expenses	347.60	
Furniture and Fixtures	326.72	
Salaries	16,984.06	
Legal Expenses	11,169.40	
Right of Way, X. A.	19,524.11	
" " " A. Q. T.	5,893.28	
" " " A. B.	11,988.80	
" " " B. K. L.	8,133.08	
" " " B. I.	2,522.51	
Interest		1,233.66
Roselle Park		7,500.00
Main Trunk X. A. Sec. 1	166,884.43	
" 2	114,184.42	
" 3	178,315.99	
" 4	62,429.52	
" 5	117,824.92	
" 6	70,437.11	
3% Reserve T. J. Shea	38.29	
" " Earle & Dougherty	6.00	
Cash	9,343.92	
	$801,733.66	$801,733.66

"Your Treasurer has prepared and will present to you a comprehensive statement of the expenditures and condition of the funds at present. I have carefully checked same and you will find a summary below:

Section 1	$171,670.59	3% Reserve	$ 4,786.16
" 2	117,471.02	"	3,286.60
" 3	183,391.92	"	5,075.93
" 4	64,169.29	"	1,739.77
" 5	121,120.36	"	3,295.44
" 6	72,448.49	"	2,011.38
Total amount of Reserve....			$20,195.28
Less amount paid			44.29
Amount due			$20,150.99
Rights of Way	48,061.78		
Other expenses	34,207.28		
	$812,540.73		
Amount received		$801,733.66	
Amount to be assessed		10,807.07	
		$812,540.73	
Amount to be assessed A. Q. T.	$4,013.64		
" " " " A. B. ..	5,380.72		
" " " " B. K. L.	2,302.37		
" " " " B. I. ...	4,971.00		
Assessment	$16,667.73		
Less X A overpaid	5,860.66		
	$10,807.07		

"The following errors were found:

"Voucher 17 Eng. News Pub. Co., $4.80 not receipted.

" 22 Cannons. $83.25 not receipted. The Treasurer, however, has endorsed check for these.

"Voucher 48 P. McGuire charged for car fare $11 should be $12.

" 65 J. R. Woodruff, paid $588 15 foots $588.09.

" 279 Check $8,574.59 voucher $8,574.57.

" 298 G. C. Hand 18 days at $3.50, $63.00 paid $64.00.

" 339 Check $2,078.59 voucher $2,078.57.

" 473 No bill.

" 607 Orange Journal Pub. Co. Check $11.90 bill $11.70.

"Voucher 650 and 677 bill but no vouchers.

" 714 No voucher.

" 810 Mills & Yeager paid $61.15 foots $62.15.

" 821 Orange Journal Pub. Co. paid $15.00 foots $13.00.

" 830 J. H. Schmidt, Jr., 23 days at $3.50, $80.50 paid $70.50.

" 913 A. Eschenfelder, no bill, $69.16.

"Your Treasurer claims that he is no bookkeeper and I desire

to say that he is therefore entitled to unusual credit for the general excellent condition of the books, for with the exception of the errors reported above the books are very well kept.

"Yours truly,

"WILL C. STAINSBY,

"Accountant."

"Summit, N. J., July 27th, 1904.

"Joint Meeting, Newark N. J.

"Gentlemen:—Herewith I hand you my final report as Treasurer of the Joint Meeting. I have drawn off three schedules:

1. Itemized cost of the six sections;
2. Assessments and costs of various branches;
3. Trial balance as of July 1st, 1904.

"The amount of cash as shown by the trial balance, $9,343.92, I have turned over to my successor, Mr. Rollinson, and hold his receipt for same.

"Since the first of July I have received from the Summit Bank $26.04 interest on balances for the months of June and July, and enclosed you will find check for this amount.

"There is one other matter that remains unadjusted. Mr. Woodruff owes the Joint Meeting rent for room from April 1st, 1903, to May 1st, 1904, at the rate of $150 per year; on the other hand we owe Mr. Woodruff rent for his room for the months of May and June, 1904, also a bill for services, which bill has not yet been rendered.

"This as well as the small item of interest mentioned above should be taken into account before making the final assessments.

"Yours very truly,

"FRANCIS S. PHRANER,

"Treasurer."

ITEMIZED COST OF VARIOUS SECTIONS.

SECTION I.

Testing	$ 510.05
Printing	196.75
Inspectors	3,587.34
Interest	58.33
Eliz. Gas & Light Co.	16.30
N. Y. & N. J. Tel. Co.	170.92
F. J. Dibble	90.00
Alexander Potter	7,502.28
T. J. Shea	154,752.46
3% Reserve	4,786.16
	$171,670.59

SECTION II.

Testing	$ 110.61
Printing	90.65
Inspectors	2,376.15
Interest	12.50
Special Engineer Rankin	150.00
Alexander Potter	5,152.91
Harrison Construction Co.	106,291.60
3% Reserve	3,286.60
	$117,471.02

SECTION III.

Testing	$ 350.20
Printing	117.85
Inspectors	5,378.50
Special Engineer Brown	250.00
Carriage hire	4.75
Alexander Potter	7,966.79
Costa Construction Co.	164,247.90
3% Reserve	5,075.93
	$183,391.92

SECTION IV.

Testing	$ 211.48
Printing	297.60
Inspectors	2,684.00
Interest	70.83
F. J. Dibble	135.00
E. P. Brown	51.00
Alexander Potter	2,727.08
J. P. Hall	56,252.53
3% Reserve	1,739.77
	$ 64,169.29

SECTION V.

Testing	$ 240.04
Printing	96.20
Inspectors	5,093.04
Interest	35.83
H. E. Van Nest	5.64
M. D. Dorer	12.50
T. J. Dibble	225.00
Special Engineers	50.00
E. S. Rankin	80.34
Alexander Potter	5,101.02

Harrison Construction Co.		1,558.63
Earle & Dougherty		105,326.68
3% Reserve Harrison Cons. Co.		48.20
3% Reserve Earle & Dougherty	$3,257.22	
Overpaid	9.98	3,247.24
		$121,120.36

SECTION VI.

Printing	$ 117.05
Inspectors	2,011.50
F. J. Dibble	90.00
Alex. Potter, extra work	35.00
Alex. Potter	3,152.38
Harrison Cons. Co.	65,031.18
3% Reserve	2,011.38
	$ 72,448.49

ASSESSMENTS AND COST OF VARIOUS BRANCHES.

X. A.			
Section 1	$171,670.59	Assessments	$340,000.00
Section 2	117,471.02	Roselle Park	7,500.00
Misc. expense	275.00	Interest	1,233.66
Preliminary exp.	2,413.04		
Print'g, P'st'ge, etc.	1,144.87		
Advertising	9.30		
Rent	1,537.29		
Office expenses	347.60		
Furnit. & Fixt.	326.72		
Salaries	16,984.06		
Legal expenses	11,169.40		
Right of way	19,524.11		
	$342,873.00		
Balance on hand	5,860.66		
	$348,733.66		$348,733.66
A. Q. T.			
Section 5	$121,120.36	Assessments	$123,000.00
Right of way	5,893.28	Balance due	4,013.64
	$127,013.64		$127,013.64
A. B.			
Section 3	$183,391.92	Assessments	$190,000.00
Right of way	11,988.80	Balance due	5,380.72
	$195,380.72		$195,380.72

B. K. L.			
Section 4	$ 64,169.29	Assessments	$ 70,000.00
Right of way	8,133.08	Balance due	2,302.37
	$ 72,302.37		$ 72,302.37
B. I.			
Section 6	$ 72,448.49	Assessments	$ 70,000.00
Right of way	2,522.51	Balance due	4,971.00
	$ 74,971.00		$ 74,971.00

TRIAL BALANCE, JULY 1, 1904.

Assessment X. A.			$ 5,860.66
" A. Q. T.		$ 4,013.64	
" A. B.		5,380.72	
" B. K. L.		2,302.37	
" B. I.		4,971.00	
T. J. Shea, 3% Reserve, Section I.	$4,786.16		
Less	38.29		4,747.87
Harrison Construction Co. 3% Reserve, Sec. II.			3,286.60
Costa Construction Co. 3% Reserve, Sec. III.			5,075.93
J. P. Hall, 3% Reserve, Sec. IV.			1,739.77
Harrison Construction Co. 3% Reserve, Sec. V.			48.20
Earle & Dougherty, 3% Reserve, Sec. V.	$3,247.24		
Less	6.00		3,241.24
Harrison Construction Co. 3% Reserve, Sec. VI.			2,011.38
Cash on hand		9,343.92	
		$26,011.65	$26,011.65

"Summit, July 27, 1904.

"FRANCIS S. PHRANER,
"Treasurer."

After the reports had been read by the Secretary, Chairman Baumann reported that the Committee through its expert had found that the accounts of the Treasurer had been found correct and kept in a very satisfactory manner, and therefore moved that the reports be received and printed in the minutes. Carried.

On motion the Secretary was instructed to request J. R. Woodruff to furnish a bill for amount due him so that the matter can be adjusted at the next meeting.

Bill of Wm. C. Stainsby for $200.00, his charge for services in making examination of Treasurer's accounts was read and on motion laid over until next meeting.

On motion of Representative Eschenfelder the Secretary was instructed to communicate with the American Surety Co. advising them of the release of Francis S. Phraner as Treasurer of the Joint Meeting dating from July 1, 1904.

There being no further business the meeting adjourned.

E. D. TUTTLE,
Secretary.

Joint Meeting of August 7, 1904.

Regular monthly meeting held this evening at the South Orange Village Hall.

Meeting called to order at 8 o'clock by Temporary Chairman Chester N. Jones.

Roll called, all municipalities being represented.

The minutes of regular meeting held July 7 and the special meeting held July 27 were approved as printed.

Representative Dr. Campbell of Millburn, on the Special Committee to adjust the Whittingham claim, reported progress, stating that the work was partially completed and by next meeting would probably be able to make report of the completion of the change.

The following communication from the Township of Millburn was received:

"Millburn, N. J., August 1, 1904.

"E. D. Tuttle,

"Secretary Joint Meeting.

"Dear Sir:—I enclose herewith an application from Annie L. Henderson for permission to connect the Fandango Mill with the sewer. Our Township Committee has directed me to refer this application to the Joint Meeting, as this is a factory connection, and the owner has an agreement with the Joint Meeting.

"Yours very truly,

"JOHN F. GENTZEL,
"Township Clerk."

On motion the permit was ordered to be granted subject to the approval of Counsel.

The following communication was received from the American Surety Co.:

"Newark, N. J., August 3, 1904.

"E. D. Tuttle, Esq., Sec.,
"1038 Springfield Ave.,
"Irvington, N. J.

"Dear Sir:—We have your letter of the 28th ult., informing us that Mr. Francis S. Phraner, covered under bond No. 296814 for $50,000.00, in favor of the Joint Sewer Commission was released as Treasurer on July 1st, 1904. Will you kindly return the bond, with Continuation Certificates, in order that the same may be duly cancelled, and the return premium will then be sent you.

"Yours very truly,
"American Surety Co. of New York,
"Jno. F. Clark, Gen. Agent."

On motion the Secretary was instructed to return the bond.

The Chief Engineer presented the following monthly report, which was read and placed on file:

"August 4, 1904.

"Joint Meeting,
"Newark, N. J.

"Gentlemen:—I have a request from the Borough of Roselle Park for a reply to their letter inquiring concerning the securing of additional capacity in our Joint Trunk Sewer. Roselle Park pays at present $7500 for 375,000 gallons capacity per day and they are desirous of securing an increase of at least half as much again, or in round numbers 200,000 gallons capacity.

"The occasion for this increase is two fold; first, there is a leakage in their system of a little less than 200,000 gallons per day, leaving them only 175,000 gallons capacity for sewerage purposes. Second, they consider it the part of wisdom to secure a larger capacity than was originally agreed upon.

"It is my opinion that the Borough of Roselle Park, if allowed this privilege of additional capacity, should be charged for the 200,000 gallons as much as the original 375,000 gallons capacity was worth, and I believe that the Joint Meeting is in a position to permit them to have this additional amount of capacity in the Joint Sewer.

"The Engineer of Roselle Park has presented to me a rather interesting proposition in connection with their present limit of capacity. Their contract specifically provides that we shall take care of 375,000 gallons per day but at certain times in the day they will be discharging into our sewer at a higher rate

than this amount. In fact at a rate of over 550,000 gallons per day, if their entire discharge was sewage; for hourly fluctuations in the sewage. With over one-half of the present 375,000 gallons made up of ground water the fluctuation from hour to hour is reduced so that the maximum hourly amount that will be discharged into the Joint Trunk Sewer will only be at the rate of 470,000 gallons instead of 550,000 gallons per day. The contention of the Engineer of Roselle Park is that in calculating the present rights they have in the sewer that this decrease in their maximum flow should be considered by the Joint Meeting. I consider that there is sufficient merit in the contention to make it worthy of some consideration on the part of the Joint Meeting.

"The Borough of Roselle Park has a monthly meeting to-morrow night, at which meeting it is expected that their system will be accepted. They are desirous of having some report from the Joint Meeting as to the terms upon which the additional capacity can be granted to them.

"I beg to report that I have made a personal examination during the month of portions of the Joint Sewer and find that near the outlet the total amount of capacity now used amounts to fifteen per cent. Between five and six hundred connections have been made to the Joint Sewer and tributary sewers, and this number of connections have added to the flow about four per cent. to the capacity of the sewer. The remaining ten or eleven per cent. of the capacity being ground water and constant. From my personal inspection and from the reports of Inspector Sandford the line in general is in good condition throughout.

"The large amount of sediment that has been carried down from Newark has formed a deposit at the manhole near Electric Park on South Orange Avenue, where there is a sudden change in the grade and also in the size of the sewer. This deposit does not extend for more than fifty feet from the manhole where the change of grade occurs. It was essential for greater facility in cleaning out this deposit to construct a second manhole within one hundred feet of the present one where the greatest amount of accumulation occurs. I had this work done by Headley & Christie, contractors, and the bill therefor, presented herewith, amounts to $30.00.

"I present herewith bill from Sessions Foundry Company for special manhole covers. A number of these have already been placed and Inspector Sandford will place practically all of the others during the next week. The amount of this bill is $276.00. These special manhole covers were ordered with the authority of your Board. The limit of price upon these covers was placed at $12.00, and it was with difficulty that I secured as low a price from them as this, as there is considerable machine work involved in the construction of these manhole covers, which in my judgment makes the price at which they are built exceedingly reasonable.

"I have made an inventory of the rods, ropes and other apparatus which Earle & Dougherty offer for sale for sewer cleaning purposes and would recommend that they be paid $80.00 for the material on hand. In paying this money to them they should agree to give us a release for the bill which they unquestionably have against the Joint Meeting for the use of this material during the past few months upon work upon which, under their contract, they were not obliged to furnish material or labor.

"An examination of the River Crossing at the Elizabeth River satisfied me that the iron pipe and supports should be painted immediately to preserve the pipe from rust, and I therefore ordered P. J. Kernan to paint this bridge. This bill amounts to $14.00 and is presented herewith properly O. K.'d by me.

"I beg to call the attention of the Board to a connection which was made in the Borough of Vailsburg, which demonstrates the importance of the Board reserving absolute control of the Joint Trunk Sewer in their own hands, and not delegating the inspection of such connections to some one over whom the Board does not exercise direct control. An examination of a connection made by a Village contractor distinctly demonstrates the fact that he did not take the trouble to dig down to find the 'T' connection but satisfied himself with using a crowbar and smashing a hole in the pipe with such force as to drive the crowbar through the bottom of the pipe as well. This repair work was done by Contractor Frank Snyder under the authority of the person for whom the connection was originally made, as the unworkmanlike manner in which it was done by the first Contractor occasioned a stoppage in the lateral sewer which could only be removed by repairing our Joint Trunk Sewer in South Orange Avenue.

"The proper official in Vailsburg delegated to inspect these connections certified that this connection was properly made and the discovery of the actual condition of affairs was purely accidental. It seems to me that with this experience the Joint Meeting should make its own inspector responsible for the proper connection of laterals to the Joint Trunk Sewer as the recovery for damage done to the Sewer through careless and inferior work can only be accomplished by a series of vexatious litigations.

"I beg to report that on Friday last while inspecting the South Orange Avenue work Inspector Sandford fell into the ditch and injured his leg to such an extent that he was confined to his home until this morning. During his absence it was necessary to employ another man to perform Mr. Sandford's duties, as the nature of the work under his charge at the time was such that it was impossible to get along without an inspector. William Welsher acted in the capacity of inspector for one day and George Hayward for three days. I would recommend that these men be allowed for this work at the rate of $3.50 per day, the price which was paid by the Joint Meeting for inspectors during construction.

"The Town of Irvington has determined to construct a system of sewers in Manhattan Park and therefor require the construction of the sewer from the intersection of Munn Avenue and Monmouth Place to their Town line through the Borough of Vailsburg. This Sewer is properly a branch of the Joint Sewer and the expense thereof should be borne by the Joint Meeting. This sewer was contemplated under the original plan but as the construction of this Manhattan Park system was postponed indefinitely it was considered unnecessary to build this part of the Joint Sewer.

"I would recommend that bids be received for the construction of this sewer and that a proper advertisement be inserted in the newspapers for this construction. Probable cost of this sewer is $1200.00, and it can be constructed during the present season. The expense of this sewer should be borne by the municipalities of Newark, Irvington, Vailsburg and South Orange in the proportions called for in the contract.

"I present herewith bill for services as Chief Engineer for the month of July amounting to $166.66.

"Respectfully submitted,

"Alexander Potter."

The application from Roselle Park for the purchase of 200,000 gallons additional daily capacity in the Joint Trunk Sewer was on motion laid over for one month and that the Secretary communicate with Roselle Park.

On motion a manhole was ordered to be built on South Orange Avenue as recommended by the Engineer.

The Engineer was on motion empowered to purchase from Earle & Dougherty their cleaning rods, etc., for $80.00, provided they would sign release for charges they might have for their use by the Joint Meeting prior to the purchase.

The action of Engineer in causing the iron pipe crossing the Rahway River to be painted was on motion concurred in.

Moved that the bill of Frank Snyder for repairs made to the sewer connection for the property located No. 360 South Orange Avenue, Vailsburg, which was imperfectly made by the Plumber making the original connection, be referred to Counsel. Carried.

Moved that the extra inspectors, Welcher and Hayward, who were employed by the Engineer be paid at the same rate per day for their services as is paid the regular inspector. Carried.

The Engineer's recommendation that action be taken for an extension to be located in Vailsburg was laid over.

The following resolution was presented by Representative Eschenfelder, who moved its adoption:

"Resolved, That the Chairman and Secretary be authorized to draw warrants for the monthly salaries of the Officers without action of the Joint Meeting."

Resolution carried.

Representative Baumann moved that the Temporary Chairman be empowered to sign the warrants during the disability of the Permanent Chairman. Motion carried.

Representative Eschenfelder reported that the Committee on Furniture had sold the same for $20.25 and that $6.00 of this amount was to be charged against amount owing to J. R. Woodruff, the balance being turned over to the Treasurer.

On motion the following bills were ordered paid:

Jas. P. Kernan, painting	$ 14.00
Cones & Dawes, printing	18.20
Grover Bros., stationery	2.30
W. A. Reeve, hardware supplies	1.35
Jos. Saal, smithwork	.75
W. B. Halsey & Co., mason material	2.09
Wm. C. Stainsby, accountant	200.00
F. Ross Sandford, Inspector	100.00
Sessions Foundry Co., manhole covers	276.00
Alexander Potter, Engineer	166.66
Wm. Rockafeller, carting	14.09
George Hayward, Inspector	12.00
Wm. Welcher, Inspector	4.00

The Engineer recommended the purchase of 200 feet of old hose to use for flushing. On motion the Engineer was empowered to make the purchase.

There being no further business the meeting adjourned.

E. D. Tuttle,
Secretary.

Joint Meeting of September 15, 1904.

Roll called—all municipalities represented except Vailsburg.

Minutes of the last meeting approved as printed.

The Secretary reported he had received an application from St. Mary's Orphan Asylum located on the corner of South Orange Avenue and Sandford Street in Vailsburg, asking for two six-inch connections, but had declined to issue the necessary permits as the rules as adopted call for but four-inch connections, and asked the Meeting for further instructions. The question of the advisability of making a departure from the adopted rules was discussed at some length, after which Mr. McCoy of South Orange moved that the application be referred to the Engineer with power to act, and if satisfactory to him, the Secretary to be empowered to issue the permit. Motion carried.

The Secretary also reported that he had an application from Mr. Mauchaur of Vailsburg for permission to make a five-inch connection. The Contractor being present stated that when the building was built the soil pipes were made five inches and it was desired to therefor make the connection five inches. After having reviewed the situation Mr. Baumann moved that the Secretary be instructed to notify Mr. Mauchaur that the Joint Meeting could only issue to him a permit for the regulation size of four inches. Carried.

The following communication from Earle & Dougherty, Contractors for Section V., was read and after being discussed at length, Mr. McCoy of South Orange moved that the communication be referred to Counsel and to be reported at the next meeting:

"August 12th, 1904.

"Joint Meeting,
"Market Street,
"Newark, N. J.

"Gentlemen:—We request your Honorable Body to pay us the retained percentage, which accrued under our contract with you for the construction of Section 5 of the Joint Outlet Sewer.

"We consider that under the circumstances we are entitled to our retained percentage, for the reason that if this contract had been carried on in its original form, we would have completed it within the specified time and would have received our retained percentage long since. The changes which were made in the contract and which increased the work, and the length of time

necessary to complete the work, were made by your Honorable Body and we think we are only asking you something that is fair.

"Trusting you will give this matter your favorable consideration, we remain,

"Very truly yours,

"EARLE & DOUGHERTY."

Dr. Campbell reported that the work on the Whittingham property had been completed at a cost of $125.75, the amount of $75.00 being for land purchased and $50.75 for labor, and therefor moved that the report be accepted and the committee discharged. Motion carried.

The following communications in the matter of additional sewage capacity for Roselle Park were read, and Mr. Kenney of West Orange moved that the application be referred to the Engineer and for him to prepare tables of figures showing the capacity of the main trunk and the proportion owned therein by each municipality, and to make report at the next meeting:

"August 23, 1904.

"To Borough Clerk,
"Roselle Park, N. J.

"Dear Sir:—The matter of the application by Roselle Park for an additional daily capacity of some 200,000 gallons in the Main Trunk Sewer was presented to the Joint Meeting by our Engineer, Mr. Potter. As the sewer has now been completed and paid for by the joint municipalities in the proportion of capacity agreed upon in the joint contract, those several proportions then becoming individual property of each municipality, it, therefore, seemed better to lay the matter over until the next meeting and be advised by our counsel as to the proper method to pursue to reach the desired result. Our next meeting will be held, probably, September 8th, and it would facilitate the matter if a definite proposition could be reached and placed before the meeting at that time, so that the Joint Meeting could recommend to the several municipalities the entering into of another contract with Roselle Park upon those terms.

"It is suggested that a conference be arranged prior to our meeting, at which time an agreement could probably be reached. If your board will appoint a date for such conference, representatives of our Board will be pleased to meet you.

"Yours truly,

"E. D. TUTTLE,
"Secretary."

"Roselle Park, N. J., September 5, 1904.

"Mr. E. D. Tuttle, Sec'y,
"1036 Springfield Ave.,
"Irvington, N. J.

"Dear Sir:—Your communication of August 23rd to the Borough Clerk has been referred to the Sewer Committee for reply. We would like to have you state on what terms we can secure 375,000 or 500,000 gallons additional to the quota already agreed upon. In considering this matter we beg to remind you that, although we are entitled to 375,000 gals. of sewage per diem we find, owing to so much of our sewer being in wet ground, that from 180,000 to 200,000 gallons of ground water percolates into our sewer each day. This is a regular flow throughout the day, while if it were sewage it would all be delivered in 12 hours or at the outside in 15 hours and consequently would mean the allotment of a larger space in your sewer than we now use. Also this clear water discharged into your trunk sewer is an advantage to you, since it serves as a flush to help clear the main sewer. Furthermore it is through this same sewer that the 90,000 gallons granted to Union Township will be discharged and it seems that a portion of this ground water should be charged to them. You will readily see that it is the presence of this large amount of ground water that causes us to consider increasing our quota if possible and we hope that you will give us as favorable consideration as you can.

"Very truly yours,
"P. B. Poliiemus,
"Chairman of Sewer Com."

The bill of Frank Snyder for repairs made to the Joint Sewer in Vailsburg which was presented at the last meeting and referred to Counsel was taken up and the Secretary stated that the Counsel had advised that if Joint Meeting or its authorized representatives had instructed Mr. Snyder to make the repairs that the Joint Meeting was responsible for the payment of the bill and that an action to recover should then be instituted against Mr. Ebert, the contractor who injured the sewer when making the original connection. On motion the bill of Mr. Snyder was ordered paid, Mr. Kenney of West Orange voting no.

Mr. Hopkins moved that the amount of Mr. Snyder's bill be referred to counsel for collection from the proper parties. Motion carried.

Mr. Sharp of Irvington moved that the Secretary be instructed not to issue any permits to Mr. Ebert until he has paid to the

Joint Meeting the cost of making the repairs made by Mr. Snyder. Carried.

The Engineer submitted the following monthly report:

"September 15, 1904.

Joint Meeting,
"South Orange, N. J.

"Gentlemen:—I beg to present my report upon the maintenance of the Joint Sewer during the past month.

"I have made a personal examination of the Second Section and also the lower part of the Fifth Section and find them in a satisfactory condition. The year which the contract with the Harrison Construction Company allows for the retention of the three per cent. on the gross amount of the contract to cover any repairs which may be necessary during that time expired on the 8th of September, and there is therefore due that Company the sum of $3,286.60, which is three per cent. of their contract.

"An examination of the Second Section revealed the fact that there were a number of manholes placed in ploughed fields where the farmers had covered up the manhole covers so that access to them was difficult. I therefore ordered the contractor to raise these covers. This work should be paid for by the Commission as the covers were placed at the surface of the ground when the sewer was constructed. The amount of their bill for this work is $17.32.

"In regard to the Fifth Section, it will be remembered that it was accepted in sections. Whether the three per cent. retained upon this contract becomes due one year from the time that each of the various parts of this section was completed and accepted, or whether it becomes due one year from the time of the final completion and acceptance of the entire work, is a matter for Counsel to decide. If, however, this percentage becomes due on each part one year from the time that that part was accepted, and used, then during the month of September there is due Earle & Dougherty, contractors on the Fifth Section, the sum of $1,122.82, which is three per cent. of $37,427.31, the value of that portion of the work accepted by the Commission in September, 1903. There are no amounts to be charged up against the Fifth Section, at least to that portion upon which the three per cent. would be due this month.

"During the month I have taken personal charge of the setting of the recording gauges to determine the flow of the sewers. It was necessary to utilize the services of an expert machinist to regulate the adjustment of these gauges to their respective places where each gauge is to be used; also the services of a mason were needed to do the necessary drilling of holes through the shelf brackets for the reception of these gauges. I have been

obliged to devote to this work during the month the exclusive use of my horse and wagon, for which no charge is made.

"During the past month I have examined the upper portions of the various branches and find that there is evidence that proper care is not being taken with the construction of the house connections, as we find large amounts of sand, gravel and clay carried down into the various ends of the Joint Sewer through the local systems. It would be well for the members of the Commission to instruct their local superintendents, or persons in charge of local systems, to see to it that those having charge of the connections as they are made exercise more care during construction in keeping out material which should not find its way into the sewers. It is much easier to prevent dirt from getting into the pipes than it is to clean it out after the dirt has once lodged in the bottom of the pipes.

"I present herewith bills of Headley & Christie for two extra manholes, one of which was built during last month but no bill presented. These manholes were necessary to expedite the cleaning out of the sewer in South Orange Avenue, where we find that large amounts of dirt are brought down which can only get into the sewer through carelessness during construction of house connections. As the flow in the sewer is not sufficient as yet to transport this sand and gravel directly to tide water, it must be removed by hand from the sewer as it lodges. This tendency to deposit should disappear altogether by the end of the year.

"The work done by Inspector Sandford during the month has been satisfactory. He has been busy with the work of inspecting and examining the various portions of the sewer, with cleaning the sewer on South Orange Avenue, and other work. I hand you herewith his report for the month.

"I submit herewith a separate communication in reference to the use of the sewer by the mills in Millburn, which is self-explanatory.

"The work of constructing the two additional manholes which were authorized several months ago is now under way and they will be constructed within the estimate made by me for that work.

"Respectfully submitted,

"Alexander Potter."

The work on Section No. 2, Harrison Construction Co., contractors, having been completed and accepted by the Joint Meeting on September 8, 1903, and the contractors having been paid the whole amount of their contract amounting to $109,578.20, except 3%, $3,286.60, which was to be retained for one year, this year being now expired, the following resolution was offered by Mr. Hopkins of Millburn, who moved its adoption:

"Whereas, The period of twelve months having expired since the final acceptance of the work done by the Harrison Construction Co. under contract dated May 20, 1902, for the construction of the Second Section of the Joint Outlet Sewer, and the Engineer having reported that the work has been kept in complete repair, and that he has not caused any money to be expended in any repairs thereon, therefore be it

"Resolved, That there be paid to the said Harrison Construction Co. the sum of $3,286.60, being the amount of the three (3%) per cent. of the gross amount earned by them under said contract reserved in accordance with the 26th section of their said contract."

The resolution was duly seconded and vote being taken was adopted, all municipalities present voting aye.

Mr. Hopkins offered the following resolution and moved its adoption:

"Resolved, That the municipalities represented in the Joint Meeting do raise and pay to the Treasurer of the Joint Meeting the sum of $5000, which shall be assessed upon the several municipalities in the proportion of their percentage of the Main Trunk designated as 'X. A.' the said monies to be used for the care and maintenance of the Joint Outlet Sewer.

"And further, That the Secretary be directed to give notice to the various municipalities of said assessment, and the proportions to be paid by each; and further, that said monies be paid to the Treasurer of the Joint Meeting within twenty days from the 15th day of September, 1904."

Motion was duly seconded, and on vote being taken was carried.

The Engineer stated that it was inconvenient at times during the time between meetings to procure laborers for small jobs unless some provision was made to pay them without causing them to wait for a meeting at which bill for such work would be ordered paid, and suggested that a small amount be placed in the hands of the Secretary for such purpose. Mr. Baumann of Newark moved that the Treasurer be authorized to pay to the Secretary the sum of $100 as an emergency fund to meet and pay small bills authorized by the Engineer. Motion seconded and carried.

The following bills having been properly audited by the Finance Committee were read and on motion ordered paid:

F. Ross Sandford, salary Inspector	$100.00
Alexander Potter, salary Engineer	166.66
Cone & Dawes, printing	14.60
M. Plum, stationery	9.33
Orange Chronicle Co., printing	2.50
Henry Keenan & Son	43.00
Henry Crawford, salary Inspector	2.00
E. D. Tuttle, salary and postage	76.70
Alexander Potter, freight	14.22
Dr. Campbell, for labor	50.75
Headley & Christy, building two manholes	60.00
Wm. Rollinson, salary	50.00
Ludwig Batt, labor and supplies	59.00
F. Ross Sandford, salary Inspector	9.46
Wm. Rockafeller, carting	14.75
Frank Angelona, mason work	52.50
Newark Fire Department, hose	30.00
H. B. Halsey Co.	.83
R. Gray, Jr.	1.00
Harrison Construction Co.	17.32
Wm. A. Reeve	3.70
Herbert A. Dobbins	96.85
Frank W. Snyder	101.50
N. Y. & N. J. Telephone Co.	29.20
J. R. Woodruff	596.50

Adjourned.

E. D. Tuttle.
Secretary.

Joint Meeting of November 3, 1904.

Regular meeting, held at the South Orange Village Hall.

Meeting called to order by Chairman Francis Speir, Jr.

Roll called—all municipalities present except Millburn.

Minutes of last meeting adopted as printed.

The Engineer presented the following as his monthly report, which was read and, on motion, filed:

"November 3, 1904.

"Joint Meeting.

"Gentlemen:—I present herewith certificates concerning the work upon portions of Section 3 and Section 5, showing that there is now due and owing the contractors the following amounts, viz.: To the Costa Construction Company, $1,872.82, and to Earle & Dougherty, $1,579.22. I have made a final inspection of this work and find that there is no reason why these moneys should not be paid.

"On October 3d last I addressed a report to the Joint Meeting, and sent it to Commissioner Jones, upon the question of the capacity of the sewer for Roselle Park and also the increased holdings of the various municipalities in the Joint Sewer due to the enlargement of the sewer for Morristown.

"During the month we have constructed two weir manholes under the supervision of Inspector Sandford, and the cost of these manholes under his supervision has been $120.00 as against $150.00 which was the average price paid for similar work heretofore. We have also placed iron ladders in three of these manholes, where access thereto was difficult in the ordinary form of construction. We have also placed, during the month, the balance of the lock covers on the weir manholes and those especially subject to interference, and we find that there has been a decided decrease in the amount of depredation committed due to maliciousness. There were only two cases during the month where we have to report depredations in the sewers: one on October 12th, on the Fourth Section, near Hillside place, and the other on the deep manhole in the Whittingham woods.

"*The Flooding of Sewers.*—There are certain sections of the Joint Trunk Sewer and local systems where the sewer is subjected to floods in heavy rain storms and where it is impossible to raise the manholes to prevent a repetition of these occurrences. The remedy in these cases is to secure perfectly watertight manhole covers without perforations, but as the ventilation secured through these perforations is almost essential to the perfect management and control of the sewer we will have

to stand this annoyance for some little time. As more and more connections are made in the sewer the necessity of ventilation through perforations in the manhole covers becomes less needed, and we can, therefore, in time, substitute tight covers for those now in use.

"The average daily flow in the Main Trunk Sewer is now 21 per cent. of its capacity, 60 per cent. of which represents the ground water infiltration in the Joint Outlet Sewer and also the lateral sewers. There is now established such an excellent flow in the 1st, 2d, 3d and also a portion of the 5th Section, that the manhole buckets can be dispensed with, as the rapidity of the flow is more than sufficient to transport to the outlet all the dirt that will have access to the sewer through the perforations in the manhole covers. These manhole buckets can be disposed of to the contractors on the Irvington local sewer, and some return thus secured to the Joint Meeting therefor.

"Inspector Sandford has been obliged to rent, from month to month, a place for the storage of materials, such as ropes, rods, buckets, etc., for which he has been paying $5.00 per month. I would recommend that some permanent arrangement be made with Mr. Gardner for the storage of these supplies.

"The work of the Inspector has now reached a point where a horse and wagon seems to be a necessity, as it is necessary for him, at various times during the month, to hire conveyances to cart his rods and ropes from point to point on the sewers, and the expense of this is almost as great as the keep of a horse and much less convenient. For the past six months I have myself on many occasions loaned to the Inspector my own rig, for which no charge has ever been made, but as the demands of the Inspector for a conveyance to cart tools, etc., are becoming greater, some way will have to be provided to meet the necessities of the case more permanently.

"Respectfully submitted,

"Alexander Potter."

The Engineer presented the following report in the matter of Roselle Park, which was read and, on motion, ordered placed in the minutes of the meeting and the Secretary instructed to forward copies to the clerk of each municipality through its representative in Joint Meeting:

"October 3, 1904.

"Joint Meeting,

"South Orange, N. J.

"Gentlemen:—As requested, I have prepared the following statement in reference to the increased capacity available for the various municipalities over that quantity which was set down

in the original contract between the municipalities. Also a report upon the ability of the various municipalities to dispose of additional capacity to Roselle Park without injury to their interests.

"First, in reference to Roselle Park. The capacity of the Joint Sewer below Roselle Park is 1,615,680 gallons greater than the capacity above Roselle Park. Against this capacity there is to be charged 748,000 gallons, which is reserved for the City of Elizabeth, 375,000 gallons per day which is already sold to the Borough of Roselle Park, and 187,500 gallons per day reserved for Union Township. The balance of Union Township's allotment in the Joint Sewer will in all probability be admitted above the City of Elizabeth.

"We have, therefore, a capacity of 305,180 gallons per day which can be disposed of without in any way affecting the interests of the various municipalities contracting for the Joint Sewer, and of which they cannot avail themselves. The capacity of the Joint Sewer above the City of Elizabeth available for the use of the various municipalities, after deducting the 175,000 gallons reserved for Union Township, is 20,169,900 gallons.

"The statement of the various capacities retained by contract in the Joint Sewer by the different municipalities is set out in Column A in the following table and amounts to 14,904,000 gallons, leaving a reserved capacity to be allotted between the various contracting municipalities in proportion to their present holdings of 5,266,000 gallons.

"The additional capacity apportioned to each municipality is found in Column B.

"Column C gives the total capacity for each municipality and shows an increase in the capacity of each municipality of 34 per cent. over their original holdings.

	A.	B.	C.	D.
Summit ...	3,000,000	1,060,000	4,060,000	406,000
West Orange	2,504,300	884,700	3,389,000	339,000
South Orange ...	2,427,900	857,800	3,285,700	329,000
Irvington	2,394,100	845,700	3,239,800	324,000
Millburn	1,553,000	548,800	2,101,800	210,000
Newark	1,480,100	522,900	2,003,000	200,000
Vailsburg	1,544,600	546,000	2,090,600	209,000
	14,904,000	5,265,900	20,169,900	2,016,000

"Morristown and adjacent or intervening municipalities have, in their preliminary talks, expressed a desire to purchase a control of about 3,250,000 gallons per day of this surplus capacity. If you should finally decide to dispose of this capacity to these

towns lying beyond Summit each municipality would still have a surplus shown in Column D over their contract holdings.

"Respectfully submitted,

"ALEXANDER POTTER."

Inspector's weekly reports were read and ordered placed on file.

The recommendation of the Engineer in reference to providing a place for storage of materials and tools was taken up, and Mr. Eschenfelder moved that the barn of Mr. Gardner, on Valley Street, Maplewood, and opposite the residence of Inspector Sandford, be rented from month to month at a monthly rental of $5.00. Motion was seconded and carried.

The recommendation of the Engineer that a horse and wagon be provided for the use of the Inspector was taken up and, on motion, laid on the table.

The following communication from Counsel Riker, in reference to final payment to Earle & Dougherty, contractors on 5th Section, was read and placed on file:

"Newark, N. J., September 20th, 1904.

"Mr. E. D. Tuttle,

"Care Sargeant Mfg. Co.,

"Summit and New Streets, City.

"Dear Sir:—I have considered the matter of the retained percentage upon the Fifth Section, as presented in the enclosed letter from Mr. Potter, dated September 15th, 1904.

"The provision of the contract bearing upon this matter is the Twenty-sixth Section, providing for the keeping of the work in repair. I have no question that the duty of the contractor, so far as the keeping of the work in repair is concerned, terminated on that part of the section which was accepted at the end of the year.

"The contract further provides that the Joint Meeting is authorized to retain three per cent. of the gross amount of the contract for the same period, to insure such repairs. There might perhaps be a doubt raised as to whether the security to be retained by the Joint Meeting was the whole amount of the three per cent. of the gross amount of the contract. I think the fairer view, however, and the one more likely to be accepted, would be that the three per cent. is only to be retained during the period in which the liability to repair continues; consequently as to any portion of the section accepted for the convenience of the Joint Meeting, the three per cent. represented by the cost of that portion can only be retained for the year

during which repairs are required to be made. I therefore advise the payment to Earle & Dougherty, contractors on the Fifth Section, the sum of $1,122.82, being three per cent. of the value of the work accepted by the commission in September, 1903, provided, of course, the figures are correct, as I understand from you that they are.

"Yours truly,

"Adrian Riker."

The following communications were read and, on motion, filed and the Engineer instructed to notify the contractors to make the necessary repairs:

"The Village of South Orange,
"New Jersey, October 26, 1904.

"Joint Meeting.

"Gentlemen:—I enclose herewith communications received by the Board of Trustees of this village, which refer to the condition of Meadowbrook Lane, as left by the contractor for Joint Sewer construction. Kindly give this matter attention. By order of the Board of Trustees.

"Very truly yours,
"M. A. Fitzsimmons,
"Clerk."

"The Village of South Orange, New Jersey,
"Office of Clerk,

"October 21, 1904.

"Board of Trustees of the Village of South Orange:

"Gentlemen:—In behalf of the property owners on Meadowbrook Lane, I desire to call the attention of your Board to the condition in which the contractors for the main sewer have left the street between Mountain House Road and West Turrell Avenue. The street was graded recently at the expense of abutting property owners and the grade should be restored by the sewer contractors. The 400 feet next south of Mountain House Road was macadamized by the Montrose Land Company and the macadam has been practically destroyed. As this portion of Meadowbrook Lane is a public street, I trust your Board will take such steps as will compel the contractors to restore the street to its former condition.

"Yours respectfully,

"Jno. R. Weeks."

"October 20, 1904.

"To the Board of Trustees of the Village of South Orange:

"Gentlemen:—We desire to call your attention to the condi-

tion in which Meadowbrook Lane, north of Mountain House Road has been left as the result of laying the main sewer.

"As you will recall, we gave our consent without charge, for the laying of this sewer, but it was provided in the agreement that the street was to be restored to its former condition and that the macadam should be repaired where destroyed. Before the sewer was laid we had macadamized the street at our expense six inches deep, and had curbed the street at our expense. The curbing is now all out of line and needs relaying, and there is not a vestige of macadam left between the westerly rail of the trolley and the westerly curb. We therefore appeal to your Board to see that this macadam is put in shape before winter, in accordance with the agreement made with us. The total cost of restoring the macadam would probably not amount to as much as the amount which you were willing to pay us for the right of way, and which we declined to accept.

"Your early attention to this matter will greatly oblige,

"Yours truly,

"Montrose Land Company,

"John R. Weeks, President."

The following communication was received from the Clerk of Village of South Orange, which was read and referred to the Engineer to report at next meeting:

"South Orange, N. J., October 26, 1904.

"Joint Meeting.

"Gentlemen:—I have been directed by the Board of Trustees to notify you that complaint has been made by Mr. S. B. Tillou as to the condition of the grade of the Rahway River, East Branch, as a result of the laying of sewer under bed of same at the South Orange Avenue Bridge.

"Very truly yours,

"M. A. Fitzsimmons,

"Clerk."

The Treasurer's report was read and ordered on file:

"West Orange, November 3, 1904.

"Joint Meeting.

"Gentlemen:—I beg to submit the following report:

"I have received up to the present time $13,074.71, together with $26.84 interest from the bank, making a total of $13,101.55. The expenditures for bills, salaries, etc., amount to $11,088.99, leaving a balance on hand of $2,012.56. Neither West Orange or Vailsburg have paid their portion of the September assessment. When this is received it will bring the total up to $3,371.06.

"I am advised by the Engineer that, under the contracts, there is a payment of $1,579.22 now due Earle & Dougherty, and a payment of $1,858.29 due Costa Construction Company; and that a further payment of $1,989.32 will be due the Harrison Construction Company (Section 6) on December 23d, or a total of $5,426.83.

"The Engineer's salary of $166.66 and F. R. Sandford's salary of $100, for October and November, make a grand total of $5,960.15 as against the $3,371.06 in the Treasury, or a deficit of $2,589.09.

"I would recommend that an assessment of $5,000 be levied to meet these payments.

"Respectfully submitted,

"Wm. Rollinson,

"Treasurer."

The work on the main stem and the Lyons Avenue branch of the Fifth Section having been completed and accepted by the Joint Meeting on September 8, 1903, and on the balance of the each branch of this section having been completed and accepted by the Joint Meeting on November 5, 1903, and the contractors having been paid the whole amount of their contract upon these portions of their contract amounting to the sum of $52,640.67, except 3 per cent., $1,579.22, which was retained for one year. This year being now expired the following resolution was offered by Mr. Baumann of Newark:

"Whereas, The period of twelve months having expired since the final acceptance of the work done by Earle & Dougherty on the Fifth Section, being the main stem, and the east branch of this section, under their contract dated 26th day of June, 1902, for the construction of the Fifth Section of the Joint Outlet Sewer, and the Engineer having reported that the work has been kept in complete repair and that he has caused the sum of $18.90 to be expended upon the work during the year in repairs thereon, therefore be it

"Resolved, That there be paid to the said Earle & Dougherty the sum of $1,579.22, being the amount of the three per cent. of the gross amount earned by them on this portion of said contract reserved in accordance with the twenty-sixth section of their said contract, less the sum of $18.90 expended under the direction of the Engineer in keeping the said work in repair during the twelve months since the final acceptance thereof by the Joint Meeting."

The resolution was duly seconded and, upon vote being taken, was ordered paid, all municipalities voting aye.

The work on Section Three of the Joint Outlet Sewer, from Station 0 to Station 73, plus 33.7, having been completed and accepted by the Joint Meeting on November 5, 1903, and the contractors having been paid the whole amount of their contract on the portion of their contract amounting to the sum of $62,360.67, except the sum of $1,870.82, which was retained for one year. This year being now expired, the following resolution was offered by Mr. Jones of Summit:

"Whereas, The period of twelve months having expired since the final acceptance of the work done by the Costa Construction Co. on the Third Section of the Joint Outlet Sewer, from Station 0 to Station 73, plus 33.7, under their contract, dated the 26th of August, 1902, for the construction of Section Three of the Joint Outlet Sewer, and the Engineer having reported that the work had been kept in complete repair and that he has not caused any money to be expended thereon during the year, therefore be it

"Resolved, That there be paid to the said Costa Construction Co. the sum of $1,870.82, being the amount of three per cent. of the gross amount earned by them on this portion of said contract reserved in accordance with the twenty-sixth section of their said contract."

The resolution was duly seconded and, on vote being taken, ordered paid, all municipalities voting aye.

Mr. Jones of Summit offered the following resolution and moved its adoption:

"Resolved, That the several municipalities represented in the Joint Meeting do raise and pay to the Treasurer of the Joint Meeting the sum of five thousand dollars ($5,000), which shall be assessed upon the joint municipalities in the proportion fixed by the contract between the several municipalities in the following manner, to wit: on First Division, West Branch, designated 'A. B.,' $2,500; on Millburn-Summit Division, West Branch, designated 'B. I,' $2,500. and further, that the Secretary be directed to notify the various municipalities of said assessment and the portion to be paid by each, and be it further

"Resolved, That the said monies be paid to the Treasurer of the Joint Meeting within twenty days from the 3d day of November, 1904."

Motion was seconded and, on vote being taken, carried.

Mrs. Emma H. Watson, of 701 Rahway Avenue, Elizabeth, appeared before the meeting in reference to the damaged con-

dition to her house, located on the corner of Rahway Avenue and Bayway, in the City of Elizabeth, claiming such damaged condition was caused by the contractor during the construction of the sewer through Bayway, and stated that there were thirteen windows cracked, the chimneys were cracked, the kitchen and water tank injured and the ceilings of five rooms fallen off, besides considerable other damage, and asked that the Board make a just compensation to her for the damages she had sustained. After Mrs. Watson had withdrawn the meeting informally discussed her claim and no action was taken.

The question being raised as to the interpretation of that provision of the statute providing for the raising of money for the maintenance of the Joint Sewer, motion was carried directing the Secretary to obtain the written opinion from Counsel.

Motion made, seconded and carried that telephone be placed in the residences of the Chief Inspector and the Secretary.

Chairman Spier spoke of the increased amount of work that the Inspector had to perform, and with the amount of mileage he had to cover it was found that he could not make his inspections and at the same time superintend the necessary repair work, and suggested that an assistant inspector be appointed.

Mr. Baumann moved that an assistant inspector be appointed, at a salary of $75 per month, Mr. Baumann's motion being amended to read at a salary of $80 per month, and motion, as amended, was adopted.

Mr. Sharp nominated Geo. W. Hayward, and Mr. Kenney nominated Martin Lannen. On vote being taken, Mr. Hayward was chosen to be Assistant Inspector for the balance of the fiscal year, and was ordered to report to the Engineer at once and his employment to date from November 4th.

Moved that the Secretary be directed to procure badges for the use of the Inspectors. Carried.

The following bills were read and, having been properly audited, were ordered paid:

F. Ross Sandford, salary Inspector	$100.00
F. Ross Sandford, salary Inspector	100.00
Alexander Potter, salary Engineer	166.66
Alexander Potter, salary Engineer	166.67
Philip L. Keach, repair work, Section 5	18.90

Noonan Bros., team hire	6.50
R. A. Gardner, team hire	30.90
New Century Livery Stable, team hire	5.00
Van Iderstine & Odel, carpenter work	2.09
H. B. Halsey & Co., mason material	4.50
Headley & Christie, building manholes	240.00
F. J. Dibble, weir attachments	3.00
W. Rockafeller, carting	3.75
N. Y. & N. J. Telephone	27.80
Cone & Dawes, printing minutes	10.40

There being no further business, the meeting adjourned.

E. D. TUTTLE,
Secretary.

Joint Meeting of February 9, 1905.

Roll called, all municipalities present except West Orange, Andrew Eschenfelder of the former Borough of Vailsburg representing Vailsburg-Newark.*

Minutes of the last meeting approved.

The Engineer presented the following as his monthly report, which was read and, on motion, filed:

"January 12th, 1905.

"Joint Meeting.

"Gentlemen:—

"On December 23rd, 1903, I presented to you the final estimate of the Harrison Construction Company on Section 6. On January the 7th, 1904, I presented final estimates for the work done by J. P. Hall, contractor on Section 4, and Earle & Dougherty on Section 5. Under the terms of the contracts the final payment of 3% on all work accepted during the months of December, January, February and March does not become due until after the first of April following the expiration of the full year. This provision in the contract was made to provide an opportunity of making repairs on the sewer and upon the ditches for an entire year during seasons when work could be performed, it being assumed that it is not practicable to restore ditches during winter weather. So that under the contracts no payments become due any of the contractors until the first of April.

"On the Fourth Section the contractor was ordered to restore

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*NOTE:—The Borough of Vailsburg was annexed to Newark on January 1st, 1905.

Meadowbrook Lane to the condition in which he found it before commencing his work, but for various reasons this was not done during the fall. For a certain period at one time when the contractor started work, the street was in the control of the Gas Corporation, who had it dug up from end to end. Later on when ordered again to proceed he presented the excuse that the ground was frozen. Before the first of April, however, there will be plenty of time after the frost gets out of the ground to enable me to proceed with this work in case the contractor fails to carry out his contract obligations.

"There has been expended on the Fifth Section since the last meeting the sum of $6.00 for filling over the sewer at the south end of Clinton Street in the late Borough of Vailsburg. This work the contractor was ordered but failed to do, and the expense should be charged up against Earle & Dougherty.

"I would recommend the purchase of 300 feet of sewer rods, as a number of those purchased a year ago from Earle & Dougherty have been broken or lost. I would also recommend the purchase of two additional brushes for the work of sewer cleaning.

"I present herewith certain bills for expenses and materials purchased by the sewer inspectors for supplies needed for cleaning and inspecting the sewers.

"I beg to report that I have during the past month made some very careful gaugings as to the flow in the sewer and the capacity of the sewer which is now occupied, and find that the total flow in the sewer at the Elizabeth line is occupying but 21% of the total capacity of the sewer, including both sewage and ground water combined. The total number of connections made to the Joint Sewer and its branches, including the local systems constructed, approximates to date 1,480. When we consider that the size of the sewer was increased 33% for ground water alone, this showing is extremely satisfactory and gives some conception of the extent to which the volume of flow can be increased before the limit of capacity in the sewer is reached. Notwithstanding the large percentage of connections made with the sewers from houses already built, the officials of the various municipalities connected with this sewer cannot too strenuously insist upon perfect work in making the connections with the houses, or the benefit accruing from the great care that has been exercised in the laying of the Joint Trunk Sewer and the lateral systems constructed under my supervision may be easily rendered ineffective if careless construction is permitted in the connecting up of the houses with the sewers or in the extensions of the various systems which will from time to time be made.

"Concerning the flow of the sewers referred to above and the amount of flow from the different municipalities interested in the

Joint Sewer and contributing to its flow I shall discuss in considerable detail in the general report upon the system which is now in process of preparation and in which I shall deal carefully with many points of great interest in the system, relating to its construction and its maintenance, which I have not been able to take up in as thorough a manner as I desired in my brief monthly reports. This report will, I think, assist your Board very greatly in presenting the importance and magnitude of your work to your constituents and aid in directing your future management of the system.

"I have now to discuss the question of the admission of surface water into the sewers. On the night of January 6th, the snow which had fallen in considerable quantities a few days previous began rapidly to melt, causing the flooding of all the street surfaces. Our perforated manhole covers, as in all heavy storms, offered an opportune drain for this surface water of the streets. Except during the time when frost is in the ground it is utterly impossible to differentiate between surface water entering through the manhole covers and ground water infiltration, but as there is at present from one foot to eighteen inches of hard frost in the ground over the entire territory traversed by our main and local systems, so that no additional gound water infiltration over the normal referred to above was possible, we were offered a most opportune condition for determining the extent of the surface drainage entering our sewers.

"From an ordinary flow of less than five million gallons per day there was passing through our sewer for a period of from 1-2 to 3-4 hours a flow equal to twenty-three million gallons per day, or three million gallons in excess of the calculated capacity of the sewer when flowing at ordinary velocity, or, in other words, the surface water flooded the sewers through the manhole covers at the rate of eighteen million gallons per day as registered at the weir manhole in Elizabeth. This excess in the sewers under the conditions stated indicated but one thing, viz.: that the water entered the sewers through the openings left in the manhole covers for ventilating purposes when the sewer was constructed. These perforations in the manhole covers, however, become less and less needful for the system as the houses are connected up with the sewers, as then other means of ventilating the sewers are provided through the vents at the street line and at the housetops. It becomes essential, therefore, and the necessity can readily be seen, to gradually close up the opening in the manhole covers so that this severe tax of surface flow may be eliminated.

"The gauges placed at various parts of the system indicate conclusively that this inflow of surface water is fairly equally distributed over the entire system and its branches. The expense of plugging these openings in the first instance will be about fifty cents per manhole, but they will require constant watching and

replugging in some instances at very short intervals. The positive and lasting plugging up of the holes is almost an impossible task, as the impact of horses' feet forces out any material placed in these holes, the more so as these holes are constructed so that the diameter of the holes on the under side of the casting is larger than the diameter of the holes on the upper side of the casting, as otherwise the holes would become clogged in a very few days with the street detritus and become absolutely ineffective at the time when they are needed.

"The effectual plugging up of these holes, necessary in the beginning of the system but detrimental in the end, has been one of the vexing problems of the sanitary engineer and to which no satisfactory solution has been offered save the one of the patient replugging of the holes. This has been the case up to the present time and was still the situation at the time the Joint Sewer was constructed. As this problem has been vexing me for some years, no satisfactory solution being offered, I have lately given the matter my especial study, and on the work recently laid out at Irvington and West Orange have designed a form of manhole cover which solves the difficulty and makes it possible to effectually close off these openings when necessary for a permanent and final expenditure of approximately not more than fifteen or twenty cents over the initial cost of the manhole covers. This will in future sewer systems constructed be a great saving both of money and trouble. My only regret is that this solution had not been reached by myself or someone else at the time our Joint Sewer was under construction. You will remember that in the face of this perplexing and vexing little problem Mr. Owen recommended that the perforated manhole covers be omitted from the system altogether. But this would have been a dangerous and doubtful experiment and one likely to have caused greater damage, not only to health, but also to the sewer itself than many times the cost of closing up the holes by the old methods after they ceased to be needed, on account of the accumulation of gases in the sewers which are likely to cause and frequently do cause serious explosions. You can appreciate, therefore, that the removing of this difficulty in sanitary constructions will be a distinct gain to economical sanitary work, as our own problem at present before us will attest.

"It seems to me, moreover, that it would be proper for the Joint Meeting to notify the various municipalities of the tax upon the capacity of their sewers and recommend the gradual shutting off of these openings in the manhole covers of the local systems as the houses are connected up with the sewer from time to time. This they should do as at times like the one mentioned they will exceed their capacity in the Joint Sewer.

"Since your last meeting the Secretary has handed me a letter from Mr. Walter I. McCoy, the representative upon the Joint

Meeting of the Village of South Orange, in which he asks certain questions. I will set forth these questions and the answers to them *seriatim*.

"1st. 'What amount of leakage is there in the joint trunk sewer north of Roselle Park?' As connections were made to the joint trunk sewer in the various municipalities before the completion of the entire joint trunk system, it was and is utterly impossible to distinguish between leakage flow and the flow from connections.

"2nd. 'If there is any such leakage, is it included in the estimated capacity of the joint sewer?' After the capacities required by the various municipalities for house drainage were figured upon the size of the sewer was increased 33% to allow for the infiltration of ground water through the joints of the sewer.

"3rd. 'What amount of sewage is now discharged by each municipality into the joint sewer?' To answer this question it would be necessary to determine the exact flow from each individual house in each municipality, which would be an endless and almost impossible task and one not affecting the Joint Sewer which has to deal only with the ultimate flow from each municipality, whether that flow is composed of house drainage or leakage, the amount of capacity owned by each municipality being fixed. The question whether the flow received by the joint sewer from the various municipalities is largely sewage or ground water infiltration is one with which the town alone is concerned and the investigation of such a question would lie with the local authorities of the towns themselves. The municipalities interested have a legal right to a certain amount of flow, and it is with an excess of this legal capacity that the Joint Meeting would deal in protecting the other various municipalities composing it.

"4th. 'What amount of leakage is now discharged by each municipality into the joint sewer?' The same answer applies as to question three. For instance, in the Town of Irvington houses are permitted to connect up their cellar drainage, whereas in South Orange there is a strict prohibition against permitting cellar water to enter the sewers. In Millburn one connection alone is discharging into their sewer 700,000 gallons per day. So that it can readily be seen that the regulation of the character of the flow rests entirely with the municipalities so long as they do not exceed their legal capacity in the joint sewer.

"5th. 'What was the method of determining how much of the discharge of Roselle Park is water and how much is sewerage?' In the case of Roselle Park, the entire local system was completed before a single house connection was permitted to be made, and therefore the entire flow entering the joint sewer from Roselle Park at that time, and which was carefully measured, was ground water infiltration. Had connections been made with

the system, as was the case in other municipalities, the exact amount of ground water received would not have been known.

"6th. 'What was the cost of the joint sewer from Roselle Park to the outlet, including in the cost a proportionate amount of the general expenses of the Joint Body and of the expenses of each municipality in connection with the joint sewer?' $158,407.32. Roselle Park already has 375,000 gallons capacity per day and desires an additional 305,000 gallons, which we can give them. These two amounts of capacity equal to three and one-seventh per cent. of the total capacity of the sewer, and their proportionate cost would be, therefore, $4,978.50. The cost of the First Section was increased approximately $4,000 for the exclusive benefit of Roselle Park. As Roselle Park was not a party to the original scheme and therefore cannot expect to enjoy the benefits accruing to the original promoters of the scheme, this $4,000 should be chargeable directly to Roselle Park itself, making the value to Roselle Park $8,976.50. In determining the ultimate payment to be made by Roselle Park, some allowance should be made for the cost of maintenance of the sewer which must be borne by the other municipalities alone. Therefore in fixing the sum of $5,000 for the additional capacity which they require, their total payment becomes $12,500, thus leaving an excess charge over its value to them of $3,538.00, which will produce annually at 4% $141.52, which is a liberal charge to them for their share of the maintenance of the Joint Trunk Sewer.

"7th. 'Has Morristown or any other municipality a right to demand that a contract be entered into allowing any of them to make use of the joint sewer?' South Orange Township has entered into some form of agreement with the Village of South Orange for the right to use the Joint Trunk Sewer, but no other municipality has any legal right to demand the use of the joint sewer.

"8th. 'Is it perfectly clear as a legal proposition that any of the municipalities now owning capacity in the joint sewer has a right to dispose of it?' It is.

"I have no further matters to report upon at this time.

"Yours respectfully,

"ALEXANDER POTTER,

"Chief Engineer."

The Executive Committee recommended that the report of the Secretary to the various municipalities in the matter of increased capacity for Roselle Park be printed in the minutes. Motion made and adopted that the recommendation be concurred in.

The Executive Committee further reported that they had con-

sidered the question of the sale to Roselle Park of an additional 300,000 gallons daily capacity in the Joint Sewer and the amount that they should pay for same, and would recommend that such sale be made for the sum of $6,000. On motion the recommendation was concurred in.

Mr. Votey, of Summit, presented the following resolution, which was read and, on vote being taken, was adopted, all municipalities present voting—five voting aye. South Orange not voting:

"Whereas, The Borough of Roselle Park, in the County of Union, has made application to the Joint Meeting for the securing of the right to discharge into the Trunk Sewer three hundred thousand (300,000) gallons of sewage daily from said Borough, in addition to the capacity heretofore granted to the said Borough of Roselle Park, now therefore be it

"Resolved, That the said request of the Borough of Roselle Park be granted upon the payment by it to the Joint Meeting of the sum of six thousand dollars ($6,000) in cash, said payment to be made within six months after the execution of the contract between the said Borough and the Joint Meeting respecting said additional capacity. And be it further

"Resolved, That a contract be entered into with the said Borough of Roselle Park for the granting to it of the additional capacity above stated upon the payment above stated and containing similar provisions in other respects to the contract heretofore entered into with the said Borough. Be it further

"Resolved, That the officers of the Joint Meeting be authorized to execute a contract in accordance herewith when approved by Counsel, and upon the ratification of this resolution by the governing bodies having charge of the construction of the sewers of the several municipalities represented in the Joint Meeting. Be it further

"Resolved, That the money paid by Roselle Park for such additional capacity be distributed by the Joint Meeting among the governing bodies ratifying this resolution on the basis of their respective contract rights in the Joint Sewer."

The Executive Committee presented a form of resolution which had been prepared by Counsel, for each municipality to adopt, thereby authorizing the Joint Meeting to enter into contract with Roselle Park for such additional capacity.

On motion the Secretary was instructed to notify the municipalities to the joint contract of the passage of a resolution as drawn by Counsel Riker approving of the sale of 300,000

gallons additional capacity in the Joint Sewer for the sum of $6,000 and to forward copy of said resolution together with the form of resolution to be adopted by each ratifying such action by the Joint Meeting.

The Executive Committee recommended the purchase of 300 feet of cleaning rods at a cost of 15c. per foot and two cleaning brushes at a cost of $10.00 each.

The Secretary was instructed to communicate with the municipalities in reference to that portion of the Engineer's report which recommends the gradual closing of the holes in manhole covers with the recommendation of the Joint Meeting that as the number of taps into the sewer are increased so as to warrant the safely plugging up of the holes in the manhole covers that such be done.

The following bills having been properly audited by the Executive Committee were read and ordered paid:

F. Ross Sandford	$100.00
Geo. W. Hayward	80.00
Alex. Potter	166.67
Frank W. Snyder	22.00
E. D. Tuttle	75.65
E. D. Tuttle	93.91
Wm. Rollinson	50.00
Orange Journal Publishing Co.	23.40
C. V. Baumann	25.00
F. R. Sharp	25.00
Thos. Kenney	25.00
Richard Hopkins	20.00
Francis Speir, Jr.	5.00
W. I. McCoy	10.00
Chester C. Jones	25.00
Andrew Eschenfelder	20.00
Wm. Rockafeller	6.00
Judas & Co.	10.00
Walsh Sons & Co.	6.30
R. Gray, Jr.	9.78
W. A. Reeve	9.60
J. A. Fitz Patrick	10.40
Thomas A. Sandford	14.40
Cone & Dawes	11.70
Baker Bros.	4.00
N. Y. & N. J. Tel. Co.	3.70
P. L. Keach	8.60

On motion meeting adjourned.

E. D. TUTTLE,
Secretary.

Copy of Communication of Secretary to the Municipalities.

"Irvington, N. J., Nov. 9, 1904.

"During the construction of the Joint Outlet Sewer the Borough of Roselle Park negotiated with, and on November 5, 1903, purchased from the Joint Meeting 375,000 gallons daily capacity in the Joint Sewer, paying therefor the sum of seventy-five hundred ($7,500.00) dollars in cash. Upon the completion of their lateral system of sewers, it was found that the volume of ground water (seepage) that found its way into their sewers was greater than they had calculated upon, and it therefore seemed necessary to procure a greater capacity in the Joint Outlet Sewer, and application was accordingly made to the Joint Meeting for an additional capacity of 200,000 gallons daily capacity.

"The Joint Meeting as organized under joint agreement as provided for by statute was for the purpose of construction, and the Joint Meeting as then organized was by statute given power to make contracts with other municipalities for a sewage outlet into the Joint Sewer. But upon the completion of the Joint Outlet Sewer it then became the property of the municipalities who built it. Each municipality owning capacity in gallons in the same percentage as each had paid for the construction, which is as follows:

Newark	9.93
Irvington	16.06
Vailsburg	10.37
South Orange	16.29
West Orange	16.80
Millburn	10.42
Summit	20.13
Total	100.00

"After the completion of the Joint Sewer the statute provided for a reorganization of the Joint Meeting for the purpose of the care and maintenance of the sewerage system. This reorganization was made June 15, 1904. At the meeting held August 4, 1904, the Borough of Roselle Park, through Engineer Potter of the Joint Sewer, made application for additional capacity. The consideration of the application was laid over for one month, and the Secretary instructed to advise with Counsel as to the legal way to proceed in the matter, and also to communicate with Roselle Park, which are shown by the following communications:

" 'August 5, 1904.

" 'Mr. Adrian Riker, City:

" 'Dear Sir:—Engineer Potter, in his report last evening, stated that he had received a request from the Borough of Roselle Park for a reply to a letter of inquiry to him concerning the securing of additional capacity in the Joint Trunk Sewer. Joint Meeting have had no official communication from the Borough direct, they have taken up the matter with Mr. Potter, and from his report it seems that they would like to secure an additional 200,000 daily capacity, and desired to know at what cost to them, as the Main Trunk has now been completed, each municipality having paid its pro rata percentage of the cost and each thereby owns absolutely that percentage of the capacity of the Main Trunk. So it seemed that the Joint Meeting was without power to make disposition of any further capacity, but that the Borough would have to take the matter up individually with some one or all the different municipalities and purchase from them, provided they felt they had space they were willing to sell.

" 'I am requested by the Joint Meeting to confer with you for advice in the matter.

" 'Yours truly,

" 'E. D. TUTTLE,
" 'Secretary.'

" 'August 5, 1904.

" 'Mr. E. D. Tuttle, Secretary, Addressed:

" 'Dear Sir:—Replying to yours of August 5 respecting the request of the Borough of Roselle Park, made to the Engineer of the Joint Meeting for a statement of terms upon which that Borough can obtain additional capacity in the Trunk Sewer.

" 'I am of the opinion: First, That the application by the Borough of Roselle Park should be made directly to the Joint Meeting and in its official capacity.

" 'Second: That under the contract between the municipalities contracting for the Trunk Sewer, it is very doubtful whether the Joint Meeting can now dispose of any capacity in the Joint Sewer without the consent of all the municipalities owning that sewer. I deem it wise that any arrangement which may be acceptable to the Joint Meeting shall be submitted to the proper municipal bodies of the several municipalities for ratification before it is actually entered into.

" 'Third: It seems to me that the Borough of Roselle Park is entitled to favorable consideration in this matter, having already been allowed to have capacity in the Joint Sewer and having constructed its local system upon that basis.

" 'The Engineer's report presents a view of the sale of capacity in the sewer which deserves considerable attention inasmuch as

it appears that the discharge will naturally be a fluctuating one throughout the twenty-four hours and that the maximum will really represent the amount which should be charged for rather than the total discharge throughout the twenty-four hours.

"'If further arrangements are made with the Borough of Roselle Park it seems to me that they should be based upon the actual cost of the Joint Outlet Sewer from the point at which their lateral enters it, including all charges, interest, etc., which go to make up the cost at this time, and that the new arrangement should not only include the additional 200,000 gallons per diem but the 375,000 gallons already contracted for.

"'I am impressed with the thought that the maximum discharge referred to by the Engineer should really have been the basis of the charge in the contract already made rather than the total discharge throughout the twenty-four hours.

"'I return the report of the engineer herewith.

"Very truly yours,

"'ADRIAN RIKER.'

"'August 23, 1904.

"'To Borough Clerk, Roselle Park, N. J.:

"'Dear Sir:—The matter of the application by Roselle Park for an additional daily capacity of some 200,000 gallons in the Main Trunk Sewer, was presented to the Joint Meeting by our Engineer, Mr. Potter. As the sewer has now been completed and paid for by the Joint Municipalities in the proportion of capacity agreed upon in the Joint Contract, those several proportions then becoming individual property of each municipality, it, therefore, seemed better to lay the matter over until the next meeting and be advised by our Counsel as to the proper method to pursue to reach the desired result. Our next meeting will be held, probably, September 8, and it would facilitate the matter if a definite proposition could be reached and placed before the meeting at that time, so that the Joint Meeting could recommend to the several municipalities the entering into of another contract with Roselle Park upon those terms.

"'It is suggested that a conference be arranged prior to our meeting, at which time an agreement could probably be reached. If your Board will appoint a date for such conference, representatives of our Board will be pleased to meet you.

"'Yours truly,

"'E. D. TUTTLE,

"'Secretary.'

"'Roselle Park, Sept. 5, 1904.

"'Mr. E. D. Tuttle, Secretary,

"'1036 Springfield Ave., Irvington, N. J.:

"'Dear Sir:—Your communication of August 23, to the Bor-

ough Clerk has been referred to the Sewer Committee for reply. We would like to have you state on what terms we can secure 375,000 or 500,000 gallons additional to the quota already agreed upon. In considering this matter we beg to remind you that, although we are entitled to 375,000 gallons of sewerage per diem we find, owing to so much of our Sewer being in wet ground, that from 180,000 to 200,000 gallons of ground water percolates into our sewer each day. This is a regular flow throughout the day, while if it were Sewage it would be delivered in twelve hours, or, at the outside, in fifteen hours, and consequently would mean the allotment of a larger space in your sewer than we now use. Also this clear water discharged into your trunk sewer is an advantage to you, since it serves as a flush to help clear the main sewer. Furthermore, it is through this same sewer that the 90,000 gallons granted to Union Township will be discharged, and it seems that a portion of this ground water should be charged to them. You will readily see that it is the presence of this large amount of ground water that causes us to consider increasing our quota, if possible, and we hope that you will give us as favorable consideration as you can.

"'Very truly yours,

"'P. B. POLHEMUS,

"'Chairman of Sewer Com.'

"At the meeting held September 15, 1904, these communications were presented to the Joint Meeting and for the purpose of enabling the various municipalities to determine whether they had a surplus of capacity in the sewer below the point of the outlet of Roselle Park that they could dispose of without detriment to them in the future. The Engineer was instructed to prepare tables showing the capacity of each. The following is the Engineer's report presented to the meeting held Nov. 3, 1904:

"'October 3, 1904.

"'Joint Meeting, South Orange, N. J.:

"'Gentlemen:—As requested, I have prepared the following statement in reference to the increased capacity available for the various municipalities over that quantity which was set down in the original contract between the municipalities. Also a report upon the ability of the various municipalities to dispose of additional capacity to Roselle Park without injury to their interests.

"'First, in reference to Roselle Park: The capacity of the Joint Sewer below Roselle Park is 1,615,680 gallons greater than the capacity above Roselle Park. Against this capacity there is to be charged 748,000 gallons which is reserved for the City of Elizabeth, 375,000 gallons per day which is already sold to the Borough of Roselle Park and 187,500 gallons per day reserved for Union Township. The balance of Union Township's allotment

in the Joint Sewer will in all probability be admitted above the City of Elizabeth.

"'We have, therefore, a capacity of 305,180 gallons per day which can be disposed of without in any way affecting the interests of the various municipalities contracting for the Joint Sewer, and of which they cannot avail themselves. The capacity of the Joint Sewer above the City of Elizabeth available for the use of the various municipalities after deducting the 175,000 gallons reserved for Union Township, is 20,169,900 gallons.

"'The statement of the various capacities retained by contract in the Joint Sewer by the different municipalities is set out in Column A in the following table, and amounts to 14,904,000 gallons, leaving a reserved capacity to be allotted between the various contracting municipalities in proportion to their present holdings of 5,266,000 gallons.

"'The additional capacity apportioned to each municipality is found in Column B.

"'Column C gives the total capacity for each municipality and shows an increase in the capacity of each municipality of 34 per cent over their original holdings.

	A.	B.	C.	D.
Summit	3,000,000	1,060,000	4,060,000	406,000
West Orange	2,504,300	884,700	3,389,000	339,000
South Orange ...	2,427,900	857,800	3,285,700	329,000
Irvington	2,394,100	845,700	3,239,800	324,000
Millburn	1,553,000	548,800	2,101,800	210,000
Newark	1,480,100	522,900	2,003,000	200,000
Vailsburg	1,544,600	546,000	2,090,600	209,000
	14,904,000	5,265,900	20,169,900	2,016,000

"'Morristown and adjacent intervening municipalities have, in their preliminary talks, expressed a desire to purchase a control of about 3,250,000 gallons per day of this surplus capacity. If you should finally decide to dispose of this capacity to these towns lying beyond Summit, each municipality would still have a surplus in Column D over their contract holdings.

"'Respectfully submitted,

"'ALEXANDER POTTER.'"

The Secretary was then instructed to prepare copies and transmit same to the representative of each municipality, to be by him presented to their official body.

Yours truly,

E. D. TUTTLE,
Secretary.

Joint Meeting of March 30, 1905.

Roll called. Present: Irvington, West Orange and South Orange.

A quorum not being present the meeting adjourned to April 6, 1905.

Joint Meeting of April 6, 1905.

Roll called. Present: Newark, Irvington, West Orange, South Orange, Millburn.

Engineer's report read and, on motion, placed on file:

"March 30, 1905.

"Joint Sewerage Commission:

"Gentlemen:—I beg to present my report covering the work of engineer and inspectors done on the Joint Trunk Sewer since your last meeting.

"On March 17 I sent to the Treasurer the details of the amounts due the various contractors on April 1, according to contract. These amounts are as follows:

Section 3, Costa Construction Co.	$1,064.45
Section 4, J. P. Hall	1,739.77
Section 5, Earle & Dougherty	1,726.20
Section 6, Harrison Construction Co.	2,011.28
Total Amount	$6,541.70

"During the winter I made examinations of the work done upon these various sections from time to time and found that certain necessary repairs would have to be made before I could recommend final payment to these contractors. Probably owing to the prolonged winter, the contractors have none of them so far completed the necessary repairs. The cost of making these repairs will be but a small percentage of the amounts due the contractors and your Commission will be justified in paying the amounts stated above, less the following amounts, which should be held until a certificate has been given by me that the defects in their work have been remedied:

Section 3, Costa Construction Co.	$100.00
Section 4, J. P. Hall	300.00
Section 5, Earle & Dougherty	200.00
Section 6, Harrison Construction Co.	200.00

"The nature of the repair work to be done upon the Costa

Construction Company's contract is the plugging up of leakage in the sewers themselves.

"On the J. P. Hall work on the Fourth Section there are a number of leaks in the sewer and also a number of poorly fitting manhole covers, and certain road repairs.

"On the Earle & Dougherty section there are a number of poorly fitting manhole covers and certain road repairs.

"On the Harrison Construction Co. section there is certain leakage which should be remedied, and certain road repairs.

"*Discharge from Various Municipalities.*—From the records of the gauges which have been established on various parts of the Joint Trunk Sewer we find that the various towns are at present using their capacities in about the following proportions:

Newark	700,000	gallons	per	day
Vailsburg	900,000	"	"	"
South Orange, Fifth Section	230,000	"	"	"
South Orange, Fourth Section	1,203,000	"	"	"
Millburn	1,900,000	"	"	"
West Orange	545,000	"	"	"
Summit	200,000	"	"	"
Irvington	2,200,000	"	"	"

"The relatively high flow in Irvington is due to three causes:

"First: To water entering the open ends of uncompleted work now under construction.

"Second: To cellar drainage.

"Third: To water entering the sewer through the perforations in manhole covers.

"The high rate of flow in Millburn is due in part to the admission of water from the three mills.

"The significance of this table is that South Orange is at the present time practically at the limit of its capacity in the Fifth Section, and the question to be dealt with is what course will the Joint Meeting pursue in order to limit the capacity of any municipality to the amount which it contracted to take in any section of the Joint Trunk Sewer? The Village of South Orange owns and controls but 4 4-10 per cent. of the capacity of the Fifth Section, which capacity has already been reached by it due to the infiltration of ground water through leaking joints in the local sewerage system. The greater portion of this leakage can be remedied at a comparatively small expense.

"When we consider that the measurements given in the table were taken in the spring of the year, after the completion of most of the local systems and the majority of the houses connected with and using the sewers, the general showing in the above table is satisfactory.

"I beg to call the attention of the representatives of the various municipalities, however, to the recommendation made in my previous report concerning the entrance of water into the sewers through the perforations in the manhole covers throughout the local systems, and that these should be generally closed off, as we find that the amount of water entering the sewer from this source is sufficient in quantity at times to temporarily occupy the entire capacity of the sewer.

"For facilitating the work of determining the flow in sewers, and the detection of leakage from the various branches of the Joint Trunk Sewer, I would recommend the purchase of a current meter, the cost of which is about $65.00.

"I beg to call the attention of the Joint Meeting to the fact that mischievous persons are still tampering with the sewers at manholes not fitted with lock covers, and I fear that the only way that this tampering can be overcome is by gradual extension of the lock covers for the manholes. I would therefore recommend the purchase of two dozen additional manhole covers fitted with locks. The cost of the first consignment of lock covers was $10.50. The nature of the obstructions placed in the sewers by these mischievous persons is largely in the nature of branches of trees, which are the most dangerous kind of obstruction in sewers, for the twigs and small branches form a ready means for the catching of paper, rags, etc., passing down through the sewer, which tend to produce a stoppage in the sewer and the backing up of the sewage, not only in the Trunk Sewer but also in the house connections of adjacent property. Stoppages due to this cause have occurred very largely over the Fifth Section in the Towns of Vailsburg and Irvington.

"*Diamond Mills Refuse.*—I have devoted much time to the study of the effect of the discharge from the Diamond Mills into our sewer, and I find that the nature of the solid material entering the sewer is detrimental not alone to the local sewerage system of Millburn but also to the Joint Trunk Sewer, and I would recommend that the Township of Millburn be requested to communicate with this company and advise them that a more positive screening apparatus must be utilized in order to intercept a greater part of the waste from their mill and prevent it from entering the sewers. The other mills in Millburn, while offenders in a somewhat similar manner, do not do so to the degree of the Diamond Mills.

"*Repairing of the Sewer.*—An examination of the sewers to determine the effect of the winter upon them indicates that the frost has badly lifted three of our manholes, permitting large volumes of water to enter into the sewer. These manholes will of necessity have to be repaired at the earliest possible moment. Several of the manholes will have to be raised because of the

ready accumulation of water in their vicinity. My examination of the sewers also indicated that on certain portions near the Newark line accumulations of silt are deposited in the sewers, which it will be necessary to clean out. It is my opinion that the cost of these repairs and necessary cleaning will amount to approximately $300.00, and I would recommend that a sufficient fund be passed to the credit of the Secretary for the payment of the necessary bills of labor, etc., in connection with this work when they become due.

"Referring again to the question of the tampering with the sewers, I have been called on and found it necessary on a number of occasions during the winter to locate and remove obstructions which undoubtedly have been placed in the sewer maliciously. In one case, on the Fourth Section, the sewer was completely blocked. This stoppage, which consisted of a piece of wood three feet long, was securely wedged in the sewer in such a manner as to necessitate considerable work on my part before being able to dislodge it. It is to be presumed that in time this tampering will become less as the novelty of the sewer wears off, but for the present the constant patrol of the sewer from end to end is an absolute necessity.

"I have made examinations as to the effect of the sewer at the outlet, and I find that there is no appreciable change in the water at the end of Bayway from what it was before this sewer was constructed.

"*New Constructions.*—On the Fourth Section and also on part of the Fifth there is considerable increase in the amount of water passing down the sewers due to the fact that contractors are at work on local systems in Irvington and West Orange and have been permitted to utilize the Joint Sewer as an outlet for the water accumulating in their ditches.

"It will be remembered that the Joint Meeting was called upon to build a roadway across the Whittingham property. The upper portion of this roadway extends from the junction of the sewer coming from Millburn and Summit with that from West Orange and South Orange to the Whittingham barn, and is about five feet above the swamp land which it traverses. Underneath the sewer a culvert, consisting of two 24-inch pipes, was built, to prevent the damming up of water on the upper side of this roadway. Mr. Whittingham has constructed head-works around the upper end of this culvert of such a nature that the roadway becomes a dam for a pond and the water does not pass through the culvert until the level of the water in the pond rises to within a foot of the top of the roadway. In my opinion the construction of these head-works and the formation of this pond will not affect the sewer, although it may create a washout in the embankments, but the constructions of these head-works seems to me to

relieve the Joint Meeting from the maintenance of the culverts or the maintaining of them open, as access to them is almost impossible under the present conditions.

"Respectfully submitted,

"ALEXANDER POTTER."

As shown by the Engineer's report there was certain work yet to be performed by the contractors on Sections 3, 4, 5 and 6, before the Engineer could give a final certificate of the completion of the contracts. It was therefore moved by Mr. Kenney of West Orange that no portion of the final three per cent. be paid the contractors until the work had been fully completed to the satisfaction of the Joint Meeting upon the certificate of the Engineer. Motion carried.

Moved that the rights of excess quantity, or use of excess capacity used by any municipality be referred to Counsel for opinion. Carried.

Moved that the Engineer procure a current meter at a cost not to exceed $65.00. Carried.

Moved that the Engineer purchase twenty-four lock manhole covers, at a cost of about $10.00 each. Carried.

Moved that if the detrimental discharge into Millburn's local sewer by the Diamond Mills in Millburn (which detrimental discharge is prohibited by the rules and regulations of the Joint Meeting) be not discontinued within twenty days in a manner satisfactory to the Engineer that the Township of Millburn be requested to have the discharge of the Diamond Mills cut off from discharging into their local system. Carried.

Moved that bill for labor amounting to $ for cleaning the Millburn sewer near the Diamond Mills be presented to Millburn for payment. Carried.

STATEMENT OF COST OF MAIN TRUNK, DESIGNATED AS X. A.

MAIN TRUNK, X. A.

Total cost	$342,873.00
Less	
Total amount of assessments paid	340,000.00
Balance of amount to be assessed	$ 2,873.00

Since the last assessment the following cash items have been received:

From sale to Roselle Park	$7,500.00
From bank, interest on deposits	1,233.66
Total	$8,733.66

These receipts, being a credit upon the main trunk, are therefore apportioned among the various municipalities according to their percentage in X. A., thereby making an overpayment on X. A. of $5,860.66. The third column in the following table shows the amount of balance due on cost of contract. The fourth column the amount of the above cash receipts placed to the credit of each municipality, and the fifth column being the difference between the third and fourth columns, shows the net credit to each after the cost of X. A. has been paid and is applied to reduce the amount of assessments due on other sections:

Municipality.	Per Cent. of X. A. Owned.	Total Cost.	Amount Paid.	Balance Due.	Per Cent. of $8,733.66.	Amount Overpaid.
Newark	9.93	$ 34,047.29	$ 33,762.00	$ 285.29	$ 867.25	$ 581.96
Irvington	16.06	55,066.40	54,604.00	461.40	1,402.63	941.23
Vailsburg	10.37	35,555.93	35,258.00	297.93	905.68	607.75
South Orange	16.29	55,854.01	55,386.00	468.01	1,422.71	954.70
West Orange	16.80	57,602.66	57,120.00	482.66	1,467.25	984.59
Millburn	10.42	35,727.37	35,428.00	299.37	910.05	610.68
Summit	20.13	69,020.34	68,442.00	578.34	1,758.09	1,179.75
Total	100.00	$342,873.00	$340,000.00	$2,873.00	$8,733.66	$5,860.66

EAST BRANCH, A. Q. T.

Total cost	$127,038.22
Less	
Total amount of assessments paid	123,000.00
Balance of amount to be assessed	$ 4,038.22

The following table shows cost of A. Q. T. to each municipality, also amount paid by each, and balance yet to be assessed:

Municipality.	Per Cent. A. Q. T. Owned.	Total Cost.	Amount Paid.	Balance Due.
Newark	26.18	$ 33,258.60	$ 32,201.40	$1,057.20
Irvington	42.35	35,800.69	52,090.50	1,710.19
Vailsburg	27.33	34,719.55	33,615.90	1,103.65
South Orange	4.14	5,259.38	5,092.20	167.18
Total	100.00	$127,038.22	$123,000.00	$4,038.22

WEST BRANCH, A. B.

Total cost	$195,380.72
Less	
Total amount of assessments paid	192,500.00
Balance of amount to be assessed ...	$ 2,880.72

The following table shows cost of A. B. to each municipality, also amount paid by each and balance yet to be assessed:

Municipality.	Per Cent. A. B. Owned.	Total Cost.	Amount Paid.	Balance Due.
Millburn	16.79	$ 32,804.42	$ 32,320.75	$ 483.67
Summit	32.43	63,361.97	62,427.75	934.22
West Orange	27.07	52,889.56	52,109.75	779.81
South Orange	23.71	46,324.77	45,641.75	683.02
Total	100.00	$195,380.72	$192,500.00	$2,880.72

WEST BRANCH, B. I.

Total cost	$ 74,971.00
Less	
Total amount of assessments paid	72,500.00
Balance to be assessed	$ 2,471.00

The following table shows cost of B. I. to each municipality, also amount paid by each and balance yet to be assessed:

Municipality.	Per Cent. B. I. Owned.	Total Cost.	Amount Paid.	Balance Due.
Millburn	32.47	$ 24,343.08	$ 23,540.75	$ 802.33
Summit	62.74	47,036.81	45,486.50	1,550.31
West Orange	4.79	3,591.11	3,472.75	118.36
Total	100.00	$ 74,971.00	$ 72,500.00	$2,471.00

The following statement shows total cost of sewer to the Town of Irvington, also the amount of money received, and balance still to be assessed:

Main Trunk, X. A.	$55,065.40	
East Branch A. Q. T., cost	53,800.69	
Total		$108,866.09
Less		
Total assessments, X. A.	$54,604.00	
Supplemental receipts	1,402.63	
Total assessment, A. Q. T.	52,090.50	
		108,097.13
Total balance to be assessed		$ 768.96

The following table shows total cost of sewer to the Village of South Orange, also the amount of money received and balance still to be assessed:

Main Trunk, X. A., cost	$55,854.01	
East Branch, A. Q. T., cost	5,259.38	
West Branch, A. B., cost	46,324.77	
West Branch, B. K. L., cost	35,478.77	
Total		$142,916.93
Less		
Total assessments paid, X. A.	$55,386.00	
Supplemental receipts	1,422.71	
Total assessment paid, A. Q. T.	5,092.20	
Total assessment paid, A. B.	45,641.71	
Total assessment paid, B. K. L.	34,349.00	
		141,891.62
Balance to be assessed		$ 1,025.31

The following statement shows total cost of sewer to the Town of West Orange, also the amount of money received and balance still to be assessed:

Main Trunk, X. A., cost	$57,602.66	
West Branch, A. B., cost	52,889.56	
West Branch, B. K. L., cost	36,823.60	
West Branch, B. I.	3,591.11	
Total		$150,906.93

Less		
Total assessments, X. A.	$57,120.00	
Supplemental receipts	1,467.25	
Total assessments, A. B.	52,109.75	
Total assessments, B. K. L.	35,651.00	
Total assessments, B. I.	3,472.75	
Total		149,820.75
Balance to be assessed		$ 1,086.18

The following statement shows total cost of sewer to the City of Summit, also the amount of money received and balance still to be assessed:

Main Trunk, X. A., cost	$69,020.34	
West Branch, A. B., cost	63,361.97	
West Branch, B. I., cost	47,036.81	
Total		$179,419.12
Less		
Total assessments, X. A.	$68,442.00	
Supplemental receipts	1,758.09	
Total assessments, A. B.	62,427.75	
Total assessments, B. I.	45,486.50	
Total		178,114.34
Balance to be assessed		$ 1,304.78

The following statement shows total cost of sewer to the Township of Millburn, also the amount of money received and balance still to be assessed:

Main Trunk, X. A.	$35,727.37	
West Branch, A. B., cost	32,804.42	
West Branch, B. I., cost	24,343.08	
Total		$ 92,874.87
Less		
Total assessments to X. A.	$35,428.00	
Supplemental receipts	910.05	
Total assessments, A. B.	32,320.75	
Total assessments, B. I.	23,540.75	
Total		92,199.55
Balance to be assessed		$ 675.32

Mr. Sharp, of Irvington, introduced the following resolution and moved its adoption:

"Resolved, That the several municipalities represented in the Joint Meeting do raise and pay to the Treasurer of the Joint Meeting the sum of $5,831.65, which shall be assessed upon the several municipalities as fixed by the contract between said municipalities in the following manner, to wit:

On West Branch, First Division, designated A. B.	$ 2,880.72
On West Branch, Third Division, designated B. K. L.	2,302.37
On West Branch, Millburn-Summit Division, designated B. I.	2,471.00
On East Branch, designated A. Q. T.	4,038.22
Total	$11,692.31
Less amount overpaid on X. A.	5,860.66
Balance	$ 5,831.65

"And, further, that the Secretary be directed to give notice to the various municipalities of said assessment and the proportion to be paid by each; and, further, that said moneys be paid to the Treasurer of the Joint Meeting within twenty days from the sixth day of April, 1905."

Resolution duly seconded and, on vote being taken, carried.

The question of maintenance was referred to Counsel for report at next meeting.

The following bills having been properly audited were read and ordered paid:

Alexander Potter, salary	$166.66
F. Ross Sandford, salary	100.00
George W. Hayward, salary	80.00
F. Ross Sandford, sundry expenses	10.00
P. Larney, salary	10.00
M. Plum, warrant book	12.50
Gilbert Smith, salary	20.00
R. Gray, Jr., supplies	14.53
Motor Electric Equipment Co.	6.00
H. H. Bond & Co., cleaning rods	37.13
R. A. Gardner, barn rent and team hire	29.50
J. H. Faulks & Co., plumbing	9.68
N. Y. & N. J. Telephone Co.	17.60

There being no further business the meeting adjourned.

E. D. Tuttle,
Secretary.

Joint Meeting of April 27, 1905.

Roll called. Present: Newark, Irvington, West Orange, South Orange, Millburn, Summit.

Minutes of meeting held April 6 approved.

Engineer's report read, and on motion placed on file:

"April 26, 1905.

"Joint Meeting.

"Gentlemen:—On March 30th I reported upon the completion of certain sections of the Joint Trunk Sewer, and recommended that the retained three per cent., less a deduction from each contractor for certain small items still unfinished at the time of my report, be paid. The three per cent. retained on the various sections were as follows:

Section 3, Costa Construction Co.	$1,064.44
Section 4, J. P. Hall	1,739.77
Section 5, Earle & Dougherty	1,726.20
Section 6, Harrison Construction Co.	2,011.28
Total amount	$6,541.70

"It was at that time the opinion of the Board that these moneys should be withheld until the matters complained of by me should be attended to.

"With the exception of the uncompleted items on the 4th Section all matters have been attended to by these contractors and I would recommend the payment of the amounts stated above to Costa Construction Co., Earle & Dougherty and the Harrison Construction Co. The contractor on the 4th Section, Mr. J. P. Hall, was advised that if he did not attend to the matters needing attention upon his section I would be obliged to attend to them myself and charge the cost to him. He informed me that he would place men upon the work of restoration of the streets to their original condition, and he actually did place men upon the resurfacing of certain streets upon his section and on Tuesday advised me that the work had been done. An examination of the work made yesterday, however, revealed the fact that the work performed by him has not been done in a satisfactory manner, and I would recommend that the amount due him be withheld until this work can be made right.

"I have not yet received bids from all the parties asked to furnish same on lock-manhole covers, but from the bids already received we can procure them for something less than $9.50 per cover, which is considerably less than we paid for them before, the price of all manhole covers having gone down.

"Yours respectfully,

"Alexander Potter."

Moved—that the reports of the Engineer upon the different contracts be taken up separately. Carried.

The Engineer having reported that the work on Section 3, Costa Construction Co., contractors, from Station 3 -|- 05 to the upper end of the works had been fully completed according to the terms of the contract with them, the following resolution providing for the payment to the Costa Construction Co. of the balance due them upon the filing with the Secretary of the final certificate of acceptance of the completion of the work, was offered by Mr. Baumann, who moved its adoption:

"Whereas, The work on Section 3, Costa Construction Co., contractors, from Section 3 -|- 05 to the upper end having been completed and accepted by the Joint Meeting May 5, 1905, and the contractors having been paid the whole amount of their contract on this portion of the Third Section, excepting the sum of $1064.45, being the amount of the 3% retained for one year; and

"Whereas, The period of twelve months having expired since the first acceptance of the work done by the Costa Construction Co. under contract dated September , 1902, for the construction of the Third Section of the Joint Outlet Sewer, and the Engineer having reported that the work on the above accepted portion of the work has been kept in complete repair, and that he has not caused any money to be expended thereon;

"Resolved, That there be paid to the Costa Construction Co. the sum of $1064.45, being the amount of the 3% of the gross amount earned by them under said portion of their contract, reserved in accordance with the 26th Section of their contract."

On vote being taken the resolution was adopted. Ayes 6, nays 0.

Section 5. Earle & Dougherty, Contractors.

Mr. Sharp, of Irvington, objected to the first payment to the contractors upon this section, stating that the Town Council objected to the payment until the streets were put in order to the satisfaction of the Town Street Superintendent, and the matter was laid over until Mr. Riker can be consulted and the Engineer take the matter up with the contractors.

Section 4. J. P. Hall, Contractor.

The Engineer having reported that although the year having expired there was certain work still to be done before he could

issue a certificate, therefore the matter was laid over until the completion of such work ordered by the Engineer.

Section 6. Harrison Construction Co.

The Engineer having reported the work on Section 6 as being fully completed according to the terms of their contract, the following resolution providing for the payment to the Harrison Construction Co. of the balance due, upon the filing with the Secretary the certificate of final acceptance of the completion of the work, was offered by Mr. Baumann:

"Whereas, The work on Section 6, 'Harrison Construction Co., Contractors,' having been completed and accepted by the Joint Meeting on December 25th, 1903, and the contractors having been paid the whole amount of their contract, amounting to $67,042.56, except 3%, $2,011.28, which was to be retained for one year; and

"Whereas, The period of twelve months having expired since the final acceptance of work done by the Harrison Construction Co., under contract dated October 21, 1902, for the construction of the Sixth Section of the Joint Outlet Sewer, and the Engineer having reported that the work has been kept in complete repair and that he has not caused any money to be expended in such repairs;

"Resolved, That there be paid to the Harrison Construction Co. the sum of $2,011.28, being the amount of the three per cent. (3%) of the gross amount earned by them under said contract reserved in accordance with the Twenty-sixth Section of their contract."

On vote being taken, the resolution was adopted. Ayes 6, noes 0.

Mr. McCoy, of South Orange, presented the following report from the Sewer Department of the Village of South Orange, as to the conditions they had in certain portions of the Fourth Section, showing an apparent leakage. The report was received and referred to the Engineer for investigation:

"OBSERVATIONS OF VELOCITY AND DISCHARGE OF JOINT TRUNK SEWER IN SOUTH ORANGE.

"April 7, 1905.

"Observations at Northeast Village Line.

1st Manhole South of West Orange line:
20" pipe. Area of flow, 0.785 sq. ft. Velocity, 1.69 ft. per sec.

Discharge, 79.6 cub. ft. per min.
or 859.525 gals. in 24 hours.
2d Manhole South of West Orange line on Montrose Avenue:
20″ pipe Area of flow, 1.1 sq. ft. Velocity, 1.69 ft. per sec.
Discharge, 111.6 cub. ft. per min.
or 1,202.044 gals. in 24 hrs.

Deduct flow at 1st manhole,	859.525		
	342.519	"	"

"There are no connections between the above manholes. The above difference (342.519 gals.) therefore represents leakage.

"Difference between above manholes, 188 feet.

"Observations at Southwest Village Line.

24″ pipe. Area of flow, 1.63 sq. ft. Velocity, 2.07 ft. per sec.
Discharge, 202.2 cub. ft. per min.
or 2,177.696 gals. in 24 hrs.

Deduct Disch. at West Orange line,	850.525	"	"
Diff. of flow contributed by South Orange plus leakage	1,319.371	"	"

The following bills, having been properly audited, were ordered paid:

F. Ross Sandford	$100.00
G. W. Hayward	80.00
Alexander Potter	166.67

Adjourned.

E. D. Tuttle,
Secretary.

Joint Meeting of June 8, 1905.

Roll called. Present: Newark, Irvington, West Orange, South Orange, Millburn, Summit.

Minutes of last meeting approved.

The Engineer's report was read and on motion placed on file:

"June 8, 1905.

"Joint Meeting,
"South Orange, N. J.

"Gentlemen:—

"I beg to present my regular monthly report. At the last meeting of your honorable body the representative from South Orange presented a report prepared by John B. Duncklee, Mem. Am. Soc. C. E., Village Engineer of South Orange, purporting to show that on 188 ft. of 22-inch pipe on the Joint Trunk Sewer in South Orange there was a leakage at the rate of 342,519 gallons in twenty-four hours. The estimate of this amount of leakage was based on the assumption by Mr. Duncklee that the size of the pipe in which the leakage reported by him was measured was 20 inches in diameter, whereas the pipe so reported was in fact 22 inches in diameter. Mr. Duncklee's computation of the flow should therefore have been 374,191 gallons in accordance with his other measurements instead of 342,519 gallons. Expressed in terms of leakage per mile, he would then have had 10,600,000 gallons—an extraordinary amount and one which would be very perceptible to the naked eye.

"Your honorable body having referred this matter to me for my report, I immediately began a careful investigation as to actual facts upon the ground, and also in order to ascertain upon just what basis Mr. Duncklee reached his conclusions. I addressed a letter to Mr. Duncklee, which reads as follows:

" 'New York, May 1st 1905.

" 'Mr. J. B. Duncklee,
" 'South Orange, N. J.

" 'Dear Sir:—

" 'I am in receipt of your report to Mr. McCoy, dated April 7th, 1905, on the observation of velocity and discharge of the Joint Trunk Sewer in South Orange.

" 'In going over this report of yours I find that you state that the velocity at the first manhole south of the West Orange line is 1.69 feet per second and that the velocity at the next manhole, the one at Montrose Ave., is 1.69 per second.

" 'Will you be good enough to advise me how these velocities were obtained? Will you also advise me how you determined the

discharges at these points? Also kindly let me have the depths at these two points. I also note that your calculation is based upon the assumption that there is a 20-inch pipe at this point. As there is in fact a 22-inch sewer there, I presume that the area of flow will be greater and that consequently the discharge obtained by you will have to be increased to correspond with the increased size of the sewer. In referring to the depths, I mean, of course, the depth of flow. This report of yours was presented to the Joint Meeting by Mr. McCoy and referred to me, and I want to make sure that the basis upon which we are both working is identical so that there can be no mistake in our respective findings.

" 'Kindly reply to this at your earliest convenience and oblige,

" 'Yours truly,

" 'ALEXANDER POTTER.'

"The following reply was received:

" 'John B. Duncklee,

" 'Civil and Consulting Engineer.

" 'South Orange, N. J., May 3, 1905.

" 'Mr. Alexander Potter,

" '143 Liberty St., N. Y.

" 'Dear Sir:—

" 'I am in receipt of your favor of the 18th inst, relative to the observations made on the Joint Trunk Sewer at the request of Mr. McCoy, Chairman of the Committee on Sewers.

" 'The observations were taken conjointly with Mr. Allen, Supt. of Sewers, Mr. Allen making the various measurements.

" 'The velocity was determined by the use of rubber balls as floats, noting the time of passage between the manholes. Six observations were taken agreeing closely and averaging 1 min. 51 sec. The distance between manholes Mr. Allen made 188'. The resulting velocity is really the average velocity of the flow between these manholes and should have been so stated in the notes handed to Mr. McCoy.

" 'The cross section of flow was ascertained by measuring the max. depth of flow at the lower edge of the upper manhole and at the upper edge of the lower manhole. Mr. Allen reaching well into the pipe. From this ordinate and the diameter of the pipe, the segmental area of flow was computed. The depth at the upper M. H. was 0.65 ft. and at the lower M. H. 0.84 ft. For the purpose of getting some approximate figures on discharge, it was assumed that the effluent velocity at the upper M. H. is the same as the influent velocity at the lower. It would appear that in the darkness of the manhole Mr. Allen must have mistaken the figures on his rule and I have suggested to him that he check his measurements. Of course, the measurement by depth of flow is necessarily approximate, as the sewage "runs up" on the measuring rod to

some extent. To obviate this as much as possible, Mr. Allen used a rod about 1/4" in dia. As you are aware, we have no facilities here for "measurement of precision" such as you have provided on the Joint Trunk Sewer.

" 'I ought to add, *personally,* and as a matter of professional courtesy, that the observations were not made on my initiative, but only because they were requested by the Chairman of the Committee.

" 'Very truly yours,

" 'JOHN B. DUNCKLEE.'

"Mr. Allen was interrogated and he stated that he thought the sewer was 20 inches in diameter and so informed Mr. Duncklee, who did not in person go down the manhole or take any measurements.

"Mr. Duncklee in his statements tacitly admits that the results of his observations are worthless. He says that the resulting velocity is really the *average* velocity of the flow between these manholes where the leakage was alleged. Both his manner of taking measurements and his method of computation being such as to give not only misleading but erroneous results.

"The volume of flow at a given point is the resultant of the area of cross section of the flow in the sewer multiplied by the velocity at the point where the cross section is taken. The flow therefore should have been determined by finding the area of the cross section at the lower manhole and multiplying it by the velocity at that point and subtracting it from the area of the cross section at the upper manhole multiplied by the velocity at that point.

"Had this been done Mr. Duncklee would have found that the sewer in question was practically water-tight. A deposit of sand or an obstruction of any kind in the sewer below the stretch in question would increase the depth of flow at the lower end of it, but the velocity of flow at the lower manhole would be less than the velocity at the upper manhole, therefore the method of calculation adopted by Mr. Duncklee was erroneous.

"Not only were observations carefully conducted, but an examination of the sewer was made both by myself and by my assistant engineers and inspectors, and it was impossible to detect any leakage in the sewer or increase in the flow at the lower manhole.

"It might be well to point out that with an instrument 1/25 the thickness of the rod used by Mr. Duncklee and Mr. Allen in taking their depths, we find it difficult to secure accurate measurements of the depth of flow, or anything approximating thereto. Such measurements are totally unreliable and misleading and should not be used upon work requiring the care that this should have received before such a report was made demanding technical care and skill. It should also be noted that a leakage of anything

In order to avoid trouble, however, the contractor has agreed with me to place additional stone upon the road for a space 6 ft. wide by 2 inches deep for a distance of 200 ft., and it seems to me that this will fully cover all that the Board could possibly be required to do. The contractor does not feel obliged to do even this, and will only consent to do so with the understanding that there will be no further witholding of his moneys.

"A claim was presented to me sometime ago by Keast Bros., owners of property on Meadowbrook Lane, claiming that the contractor, J. P. Hall, damaged their lawn. The actual damage done was caused by the blocking off of a pipe leading from Keasts' cesspool to the Rahway River during the construction of the sewer. Mr. Hall stands ready to pay $50.00 in full sett'ement of this claim and I would recommend that this amount be deducted from him until a receipt has been received from Keast Bros.

"I present herewith the report which I was instructed to prepare concerning the history and construction of the Joint Sewer, and which has been carefully gone over by Mr. Speir and in large part by Mr. Tuttle, and which I trust will in all ways meet the approval and satisfaction of your honorable body. Months of thought and much painstaking labor have been bestowed upon this report, and while I can now see ways in which I should like to improve it, as perhaps we all do upon work done in any line, it was still the best effort I was able to give at the time, and presents, I think, fully and completely the great and economical construction of the Joint Trunk Sewer and the efforts bestowed by the Joint Meeting in making this joint enterprise a success.

"There has been a perceptible decrease in the amount of the stringy matter which entered the sewers from the Diamond Paper Mills, indicating greater care on the part of the mill.

"Respectfully submitted,

"Alexander Potter."

The Engineer presented advance copies of his complete report of the construction of the sewer, and stated that should the Board desire to order additional copies at once, the printer would furnish 500 more for $166.00; and on motion he was instructed to procure them.

Section 4. J. P. Hall, Contractor.

The Engineer having reported that the contractor for this section has performed all the work required of him on this section, but inasmuch as he reports some question raised by the property owners concerning the condition of Meadowbrook Lane, it was decided to retain the sum of $100.00 from the amount of the final 3% due the contractor until such questions were fully adjusted.

The following resolution providing for the payment to J. P. Hall of the balance due him, less $100.00, was introduced:

"Whereas, The work on Section 4, J. P. Hall, contractor, having been completed and accepted by the Joint Meeting, February 4, 1904, and the contractor having been paid the whole amount of his contract, amounting to $57,992.30, except 3%, $1,739.77, which was retained for one year; and

"Whereas, The period of 12 months having expired since the final acceptance of work done by Jas. P. Hall by contract with the Joint Meeting for the 4th Section of the Joint Outlet Sewer, and the Engineer having reported the work has been kept in complete repair (subject to the questions raised by property owners on Meadowbrook Lane) and that he has not caused any money to be expended thereon,

"Resolved, That there be paid to Jas. P. Hall the sum of $1,639.77, being the amount of the 3% of the gross amount earned by him under the said contract, reserved in accordance with the 26th Section of said contract, except the sum of $100.00, which amount is still retained until the questions in dispute with the property owners on Meadowbrook Lane are fully adjusted."

Vote taken, the resolution was adopted. Ayes 6, noes 0.

Section 5. Earle & Dougherty, Contractors.

The Engineer having reported that the work on Section 5 had been completed and kept in repair for one year except certain imperfect manhole covers that had developed, which the manufacturers have agreed to replace, it was decided to retain the sum of $100.00 from the amount due the contractors until such repairs have been completed, and the following resolution providing for the payment to Earle & Dougherty of the 3% balance due them, less $100.00, was introduced:

"Whereas, The work on Section 5, Earle & Dougherty, contractors, having been completed and accepted by the Joint Meeting June 3, 1904, and the contractors having been paid the full amount of their contract, amounting to $110,180.75, except the final 3%, on the portion of their contract accepted June 3, 1905, which was retained for one year; and

"Whereas, The period of twelve months having expired since the final acceptance of work done by Earle & Dougherty, under contract with the Joint Meeting for the 5th Section of the Joint Sewer, and the Engineer having reported that the work has been kept in complete repair (except certain imperfect manhole covers) and that he has not caused any money to be expended thereon, therefore be it

"Resolved, That there be paid for account of Earle & Dougherty the sum of $1610.22, being the amount of the 3% of the gross amount earned by them on the portion of their contract accepted June 3, 1904, reserved in accordance with the 26th section of said contract, except the sum of $100.00 retained as above, the said payment to be made as follows: to Earle & Dougherty the sum of $1562.02, and to Harrison Construction Co., sub-contractors with Earle & Dougherty, the sum of $48.20."

On vote being taken the resolution was adopted. Ayes 5, noes 0.

Section 3. Costa Construction Co., Contractors.

The Engineer having reported that the work on Section 3 has been completed and kept in repair for one year, the following resolution was introduced:

"Whereas, The work on Section 3, Costa Construction Co., having been completed and accepted by the Joint Meeting June 3, 1904, and the contractors having been paid the whole amount of their contract, amounting to $169,323.83, except $2140.66, which is the amount of balance due on the final 3% on their contract which was retained for one year, this year being now expired:

"Resolved, That there be paid to Costa Construction Co. the sum of $2140.66, being the belance of the final 3% of the gross amount earned by them on their contract and reserved in accordance with the 26th section of said contract."

Vote being taken the resolution was adopted. Ayes 5, noes 0.

Moved that the Chairman appoint a committee on legislation. Carried.

Mr. Kenney offered the following resolution and moved its adoption:

"Resolved, That the several municipalities represented in the Joint Meeting do raise and pay to the Treasurer of the Joint Meeting the sum of $2500 to be applied on maintenance account, which sum shall be assessed upon the Joint Municipalities in the proportion fixed by the contract between the several municipalities, and further, that the Secretary be directed to notify the various municipalities of such assessment and the portion to be paid by each; and be it further

"Resolved, That the monies be paid to the Treasurer of the Joint Meeting within 20 days from June 8, 1905.

"Resolved, That the Secretary in making such assessment shall reapportion the first assessment for maintenance account so that

the same shall be share and share alike instead of the proportion as fixed by the contract on X. A. as the assessment was apportioned."

Vote taken and resolution carried. Ayes 5, noes 0.

The following bills having been properly audited, were read and ordered paid:

Alexander Potter, salary	$166.66
F. Ross Sandford, salary	100.00
George Hayward, salary	80.00
Baker Bros., printing	4.00
Stone-Woolley Co.	3.90
William A. Reeve	3.00
F. Ross Sandford, expenses	6.93
Geo. W. Hayward, expenses	12.50
Headley & Christie	8.50
Geo. H. Woolley	2.00
P. H. Kiernan	10.75
E. D. Tuttle, petty cash	146.19
Cone & Dawes, printing	39.15

There being no further business the meeting adjourned.

E. D. Tuttle,
Secretary.

Joint Meeting of July 27, 1905.

Roll called. Present: Irvington, West Orange, South Orange, Millburn.

Minutes of last meeting laid over.

Treasurer's yearly report read and referred to the Auditing Committee.

Secretary's yearly report read and referred to the Auditing Committee.

Engineer's report read and placed on file:

"July 27, 1905.

"Joint Meeting.

"Gentlemen:—I herewith present my usual monthly report and transmit herewith a bill of Kolesch & Co. for a Gurley current meter, ordered by the authority of the Board and which cost $10.00 less than the appropriation for this purpose. I also present bill from F. J. Dibble for 500 dials for the recording gauges and two dozen pens for the same, all amounting to $25.40. I also present bill of Joseph Saal for material and labor ordered by Inspector Sandford amounting to $15.55.

"During the past month I have instructed the inspectors to proceed with the cleaning out of certain stretches of the sewer which for various reasons hereinafter stated have silted up. The entire cost of this work has been $88.00. I should also like to have a ruling of the Board as to whether this special work is to be charged up against the sections making use of these certain sections of the sewer which require this special attention or whether the cost of this work is to be included in the general charge of maintenance of the Joint Trunk Sewer.

"At the meeting held previous to the last meeting I was authorized to procure some additional lock manhole covers. As these are a special design there has been considerable machine work to do upon them, but I have been advised from the foundry that they have been completed and will be shipped forthwith. From the reports of the inspectors and from my own observations along the line of the sewer, I find that the period of novelty of the sewer has not worn off at certain parts of the work, and boys or maliciously inclined persons still continue to remove the covers from the manholes, hiding them sometimes in the ponds and rivers; filling the manholes with stones or other substances. It seems to be impossible to do anything to stop this further than to extend the system of lock manhole covers.

"I beg to report upon the condition of the line through Vailsburg section from the point where the private sewer from the

Maybaum slaughter house enters the Joint Trunk Sewer. Since this connection has been made numerous complaints have been made by the residents along the line of the Joint Sewer about the terrible odors which arise from it periodically. Since this sewer has been connected I have made a number of visits personally along the line of the sewer just below where the connection is made and find that while at times there is no perceptible odor arising therefrom, still at other times the stench is almost unbearable at certain points of the sewer. The removal of the offal from the creek is of such vital importance to the residents of the Vailsburg section and also to the riparian owners below, that I am loath to make any recommendation for its removal from our sewer until all possible efforts have been exhausted to have it pass down the sewer without harmful effects upon the residents along the line of the sewer.

"Mr. Riker, Counsel of the Commission, is of the opinion that the Joint Meeting is vested with sufficient powers to shut off this discharge provided it continues to be a nuisance to the people, but very properly suggests that all means be first exhausted to cure this nuisance before passing any ruling prohibiting the use of the sewer to the slaughter house. I have therefore ordered the inspectors, as a preliminary, to seal up the manhole covers in the vicinity from which the complaints come. I also find upon investigation that the slaughter house has not yet installed a large automatic syphon which was included in the plans, which will periodically discharge a considerable volume of water for a short period each day, thereby flushing the sewer, which will undoubtedly when installed tend to ameliorate the present condition of the sewer. I have urged the contractor to have this siphon installed with all due diligence, and I hope that this will tend very largely to obviate the existing nuisance. If, however, this fails to entirely relieve the bad conditions there existing, I shall institute other methods of relief in the endeavor to obviate the trouble.

"I have also made a careful examination for the purpose of determining whether or not the discharge from this slaughter house tends to create stoppage in the sewer which would prove objectionable, but so far I have not been able to discover that any serious results have been occasioned by the admission of the slaughter house refuse into the sewer. However, our watchfulness cannot be diminished, for there was so much known opposition to the admission of this slaughter house refuse to the sewer that the tendency on the part of the slaughter house people would be in the beginning toward extreme care, knowing full well as they do that the use they are making of the sewer is being carefully watched.

"Connections to the local systems continue to be made and the majority of the houses throughout the district covered by the sewers are now connected up. I have now in course of prepara-

tion tables and diagrams showing the flow in the sewer from the various towns. From the information secured from the weekly gauge records of the flow in the sewer, it is safe to say that our prediction that the Joint Sewer was constructed large enough to accommodate a population four or five times the present tributary population was true, provided, of course, that the local connections are properly built, inspected, and a proper supervision and restriction is observed throughout the local systems in regard to the admission of roof and ground water. All these matters, however, will require careful watching in order to extend and prolong the usefulness of your present valuable asset.

"I am of the opinion, also, that while the jurisdiction of the Joint Meeting may legally be restricted to the Joint Sewer proper, still it is the duty of the Joint Metting to have a general supervision and inspection as to the character of the work performed by the various municipalities in their local sewer work. It might at first sight be considered that this is of no interest to the Joint Meeting because it is interested merely in the quantity of sewage contributed by each of the various municipalities, but if careless work or supervision is done by the various towns, then certain of them will reach their capacity the sooner. But the matter will not end there, for when any certain town has reached or exceeded its capacity, what are the other towns going to do about it? Some remedy will have to be sought, and yet other towns, having plenty of capacity, but none to give up, will not wish to enlarge the Joint Sewer, simply for the benefit of some town which has carelessly constructed or neglected its local system, thereby wasting its capacity in the Joint Sewer. It therefore seems to me to be the part of wisdom to delay the time when the question of some one town's overrunning its capacity will have to be considered, and that therefore a reasonable inspection and restriction as to the character of the local work in the various communities should be safeguarded. To this end I have personally visited work in process of construction in some of the towns, although not directly under my supervision, and, although not assuming any authority in the premises, have advised and suggested at various times ways and means for securing the best possible conditions and results upon the local sewers which contribute to the Joint Trunk Sewer.

"During the coming months I will proceed with the work of plugging up the manhole covers along the line of the Joint Trunk Sewer, as sufficient connections have now been made with the local systems to obviate the necessity of ventilation through the manhole covers along the line. I would also respectfully recommend to the various towns the wisdom of an intelligent extending of this work to the manhole covers upon certain parts of the local systems, where the admission of surface water produces an abnormally large increase in the flow of the sewer at certain seasons of

the year. I will be glad to advise with the local authorities as to the points where this work can be advantageously conducted.

"Respectfully submitted,

"ALEXANDER POTTER."

Mr. McCoy offered the following resolution:

"That a reward of $50.00 be offered for information leading to the arrest and conviction of any person tampering with or injuring the Joint Outlet Sewer."

Carried.

Moved that the same be advertised by such methods as the Secretary may deem proper. Carried.

Moved that the terms of all officers begin on the first day of July of each year and that the fiscal year end on the thirtieth day of June of each year.

Mr. McCoy offered the following resolution:

"That South Orange Township be allowed to connect into the Joint Trunk Sewer at Maplewood, in pursuance with its contract with the Village of South Orange, and under the rules and regulations of the Joint Meeting, provided the legality of the resolution is approved by Counsel."

Carried.

The following persons were elected as officers of the Joint Meeting for the ensuing year:

Chairman	Francis Speir, Jr.
Treasurer	William Rollinson
Secretary	Edward D. Tuttle
Engineer	Alexander Potter

F. Ross Sandford and Geo. W. Hayward were appointed inspectors upon the same terms as per agreement of last year.

Adrian Riker was appointed Counsel with a retainer of $250 per year.

On motion, the salaries of officers be the same as last year. Carried.

The following bills having been properly audited, were read and ordered paid:

F. Ross Sandford, salary June	$100.00
F. Ross Sandford, salary July	100.00

Geo. W. Hayward, salary June	80.00
Geo. W. Hayward, salary July	80.00
Alexander Potter, salary June	166.67
Alexander Potter, salary July	166.67

Adjourned.

E. D. TUTTLE,
Secretary.

Joint Meeting of August 2, 1905.

Roll called. Present: Newark, Irvington, West Orange, South Orange, represented by Mr. Metcalf, and Millburn by Dr. Campbell.

Moved that the report of the Secretary be put in the printed minutes. Carried.

REPORT OF SECRETARY.

"During the year just closed the cost of the Joint Outlet Sewer has been $9,031.72, as follows:

Cost of additional right of way	$ 125.75	
Salary of Engineer	2,000.00	
Salary of Inspector	1,200.00	
Salary of Assistant Inspector	960.00	
Salary of Treasurer	200.00	
Salary of Secretary	300.00	
Counsel	341.00	
Executive Committee	295.00	
Tools	260.72	
Expense, Pay Rolls for labor and repairs	1,869.06	
		$7,551.53

"There was also expended the following amounts that are properly chargeable to Construction account:

Will C. Stainsby, Accountant	$ 200.00	
Expenses of old board paid	891.95	
Printing Engineer's Report on Construction	388.24	1,480.19
Total		$9,031.72

"The Receipts have been:

Assessment	$5,000.00	
Assessment	2,500.00	
Sundry cash receipts	272.92	7,772.92
Balance owing		$1,258.80

There is still due Earle & Dougherty	$ 91.40
There is still due James P. Hall	1,739.77
Total amount owing	$3,089.97
The balance of cash on hand is	2,232.61
Net amount to be raised	$ 857.36

"Your Secretary would suggest that the items of cost amounting to $1,480.19 should be assessed in the proportion as fixed on X. A. and charged against construction account.

"Under the statute passed at the last session of the Legislature it is now incumbent upon the Joint Body to certify to the various municipalities what amount will be deemed necessary for the maintenance of the sewer for the ensuing year, which should be done and an assessment made for a portion of same.

"E. D. TUTTLE,
"Secretary."

Mr. Sharp offered the following resolution and moved its adoption:

"Pursuant to the statute in such case made and provided, the Joint Meeting do hereby certify that they have considered the probable cost of maintenance of the Joint Trunk or Outlet Sewer, and have made an estimate of such cost for the year beginning July 1, 1905, and ending June 30, 1906, and hereby certify their estimate of such probable cost to be the sum of $8,400.00, and that the proportionate share of such estimated cost to each of the jointly contracting municipalities is as follows:

Newark and Vailsburg	$2,400.00
Irvington	1,200.00
South Orange	1,200.00
West Orange	1,200.00
Millburn	1,200.00
Summit	1,200.00

and that the Joint Meeting will make calls for said sums as near quarterly as possible."

Resolution adopted. Ayes 5, nays 0.

Mr. Baumann offered the following resolution:

"Resolved, That the several municipalities represented in the Joint Meeting do raise and pay to the Treasurer of the Joint Meeting the sum of $1,480.19, which shall be assessed upon the Joint Municipalities in the proportion fixed by the Joint Contract between the several municipalities on the Main Trunk or Outlet Sewer designated as X. A., and further, that the Secretary be

directed to notify the various municipalities of said assessment and the proportion to be paid by each, and be it further

"Resolved, That the said moneys be paid to the Treasurer of the Joint Meeting within 20 days from the 3rd day of August, 1905."

Resolution adopted. Ayes 6, nays 0.

Mr. Kenney offered the following resolution:

"Resolved, That the several municipalities do raise and pay to the Treasurer of the Joint Meeting the sum of $2,100.00, which shall be assessed upon the Joint Municipalities in the proportion fixed by the contract between the several municipalities, to provide for the care and maintenance of the Joint Sewer, i. e., each municipality to the Joint Contract paying an equal amount or one-seventh of such Assessment, and further, that the Secretary be directed to notify the several municipalities of such assessment and the amount to be paid by each; and be it further

"Resolved, That the said moneys be paid to the Treasurer of the Joint Meeting within 20 days of the 3rd day of August, 1905.

Resolution adopted. Ayes 6, nays 0.

Mr. Metcalf offered the following resolution:

"Resolved, That the Chairman and any member of the Executive Committee who shall be present at a meeting regularly called by the Secretary, whether there be a quorum or not, be entitled to receive the sum of $5.00. No one member of the Executive Committee or the Chairman thereof to receive a sum exceeding $50.00 in any one fiscal year."

Resolution adopted. Ayes 6, nays 0.

Moved that the Secretary be reimbursed for rent paid by him for his office during the past year, amounting to $48.00. Adopted. Ayes 6, nays 0.

Moved that the present office of the Secretary be secured and that the Joint Meeting pay a rental of $4.00 per month for same. Adopted.

The following bills were read and ordered paid:

Francis Speir	$ 25.00
E. C. Voty	15.00
C. V. Baumann	15.00
J. J. Kenney	20.00
W. I. McCoy	20.00
F. R. Sharp	25.00

N. Y. & N. J. Telephone Co.	20.30
Richard Hopkins	20.00
Adrian Riker	341.00
E. D. Tuttle	150.00
R. A. Gardner	37.00
P. L. Keach	3.50
E. W. Price	10.00
Baker Bros.	8.00
Thos. A. Sandford	1.20
D. O. Meeker	33.00
Geo. W. Hayward	1.25
R. Gray, Jr.	3.13
Jos. Saal	15.55
Kalisch & Co.	50.00
F. J. Dibble	25.00
McGraw Publishing Co.	126.00
Schultz & Gasser	262.24
H. H. Bond & Co.	48.40
E. D. Tuttle	48.00
Wm. Rollinson	120.00
F. R. Sandford	16.43

Adjourned.

E. D. TUTTLE,
Secretary.

Joint Meeting of October 19, 1905.

Roll called. Present: Irvington, West Orange, South Orange and Millburn.

Minutes approved as printed.

The Engineer presented the following report, which was read and placed on file:

"Joint Meeting,
"South Orange, N. J.

"Gentlemen:

"I present herewith my report in connection with Joint Sewer matters as follows:

"Regular and systematic inspections of the work have been made by your Engineer and his assistants and also by the Inspectors employed upon this work. Certain sections of the sewer continue to require cleaning, but these sections are limited in number, embracing the three branches of the Newark sewers and the upper end of the fourth section in South Orange Village.

The necessity for cleaning on the fourth section is due to the fact that a great deal of construction work has been and is in progress in West Orange, thus carrying down into the sewer a great amount of sand, dirt, etc. This work is rapidly nearing completion, and there will be less liability of settlement of sand in the upper stretches of the sewer.

"The Joint Trunk Sewers immediately adjacent to the Newark line continue to give us trouble, and the only way that this can be accounted for is in the less severe plumbing regulations in force in Newark in the construction of house laterals. The inspectors have been engaged upon the work of cleaning for the last month and the expense of this cleaning is in the vicinity of $125.00. Taken as a whole this is not a very serious item, as it is nearly six months since such cleaning has been necessary.

"South Orange Township Sewers.

"By an agreement with South Orange Village, the Township of South Orange has the privilege of connecting up five hundred houses to sewers draining into the Joint Trunk Sewer. There is no restriction as to the part of the Township in which these connections can be made. The area of the Township is much greater than the area of the Village of South Orange and bids fair to soon have as many miles of public streets as the Village now has. If there be no other basis of restricting the use of the sewers by the Township than the number of houses, the Township might build so many and such large sewers as to use up in ground water infiltration, leakage through manholes, etc., not only its own portion of capacity, but also the capacity of the Village of South Orange and the Town of West Orange in the Joint Sewer. Indeed, in the plans already prepared for taking care of about one-fifth of the area of the Township, the capacity of the sewer leading into the Joint Sewer is as great as the total capacity of South Orange Village and West Orange in the Joint Trunk Sewer. If the balance of the Township should be sewered in the same liberal way, they will have a capacity of discharge in their local system as great as the entire Joint Outlet Sewer. One objection to designing sewers in excess of the size needed to carry off the quantity of sewage allotted to them is that the leakage in a sewer varies directly as the square of the diameter; that is to say, that an 18-inch pipe will have three and one-fourth times the leakage of a 10-inch pipe. The former is the size designed by the Township; the latter is ample for all their needs.

"I bring this matter to the attention of the Joint Meeting because I realize that while South Orange Village can, of course, be notified to cease, when it exceeds its capacity in the Joint Trunk Sewer, it is altogether a different matter to compel it to do so, or for the Village to be able to reduce its flowage after it

has once been established. I consider that it is far better to prevent a condition than to remove it, on the old principle that 'an ounce of prevention is worth a pound of cure.' If South Orange Village would alone be the sufferer by reason of the Township exceeding the quantity of discharge, anticipated by the Village, that it might require, it would be entirely its own affair, but this is not so. Take, for instance, the case of the City of Orange. That City secured the right to drain into the Passaic at Belleville provided it would so store its sewage on flood tide as to discharge it only on the ebb tide. Orange entered into the agreement in good faith, but through leakage and other reasons the discharge has been so increased as to make the carrying out of their agreement impossible except at a great additional expense, and the sufferers are the persons who gave them the privilege, not the offenders, at all. That Belleville has legal redress is admitted, but that is a long and tedious and uncertain course, which might have been obviated in the beginning. The same is true with the South Orange Township situation.

"Maybaum Abbatoir Sewer.

"I beg to report that the arrangement provided by this Company to prevent objectionable matter from entering the sewers is satisfactory, and if it is properly attended to, no objection can be raised to allowing them the privilege of a sewer outlet to the benefit not only of themselves, but also to all the people living in that neighborhood.

"Lock Manhole Covers.

"The Inspectors have placed all the lock covers on the manholes at points where we have found evidences of boys tampering with the sewers. We have seven of these lock covers left, and they will be used as occasion requires. The bill of Sessions Company for these manholes is presented to-night.

"Keast Matter.

"It will be remembered that Keast Bros. presented a bill for $125.00 for damages done to their property by the contractors on the fourth section. On my recommendation $50.00 was withheld from the contractors to settle this account. Keast Bros. have expressed their willingness to accept this amount, and I would suggest that a check be sent to them in payment in full for their claim.

"Conveyance for Inspectors.

"For the winter months, at least, arrangements should be made so that a conveyance be placed at the disposal of the Inspectors, either by the purchase of a horse or by the rental of one by the month.

"Table of Sewer Flows.

"I present herewith a table showing the average monthly and also the average flow in the sewers and also the capacity of the sewer at the point of observation. It will be seen from this table that there is ample room for further growth, as most of the municipalities have the majority of their houses already connected up with the sewers. The only exception to this general statement is in the case of that portion of South Orange which is drained through the fifth section. Here, during the wet season, the sewers are discharging 45 per cent. more than their maximum allottment, mentioned in the table, due to preventable leakage in the Syndicate Section of the South Orange local sewers.

"Joint Trunk Sewer.

TABLE SHOWING DATA IN RELATION TO FLOW.

A	B	C	D	E	F	G
Bayway and North Ave.	5,434,000	21,000,000	All towns	26%	9,150,000	44%
4th Sec. near Montrose Ave.	662,250	3,528,000	W. Orange	19%	1,080,000	31%
Sec. 4 near Parker Ave.	1,415,250	6,648,900	W. O. and pt. S. O.	21%	2,380,500	36%
Sec. 4, Millburn Ave.	1,730,250	6,648,900	W. O. and pt. S. O.	26%	2,655,000	40%
Lyons Ave.	357,750	900,000	Pt. Newark	40%	788,000	87%
19th Ave. and 20th St.	170,100	650,000	Pt. Newark	26%	252,000	39%
S. Or. Ave. near 20th St.	49,500	535,300	Pt. Newark	9%	54,000	10%
Marion Ave.	219,750	300,000	Pt. S. Or.	73%	468,000	156%
Sec 5, near Orange Ave.	1,241,100	3,341,430	Pt. So. Or., Newark and Irvington	37%	1,881,000	56%
Union Ave.	1,913,250	7,935,600	Pt. So. Or., Newark and Irvington	24%	3,483,000	44%
Sec. 6, near Main St., Millburn	1,209,000	5,862,500	Summit, Pt. of W. Orange Pt. of Millburn	21%	1,440,000	25%

Note.—A. Location of Gauge.
B. Present average daily discharge, gallons.
C. Maximum allotted daily discharge.
D. Municipalities contributing.
E. Ratio of present average daily discharge to maximum allotted discharge daily.
F. Present maximum daily discharge.
G. Ratio of present max. daily dis. to max. allotted discharge.

"Summit Sewers.

"The contractor who is building the connecting link to divert a portion of Summit's existing system has not yet completed his work, so that the use that Summit is making of the Joint Sewer at present is quite restricted. This sewer should have been completed a year ago.

"Balance Due Earle & Dougherty.

"I would recommend the payment of $50.00 to Earle & Dougherty in full for all their claims against the Joint Meeting, it having cost the Joint Meeting $50.00 to place defective manholes left by them in good condition.

"Respectfully submitted,

"Alexander Potter."

Mr. Kenney, of West Orange, offered the following resolution:

"That the sum of $50.00 be paid to Keast Brothers in settlement of their claim against Contractor Hall for damages done to their property on Meadowbrook Lane, and that the amount be charged to Contractor Hall and to be deducted from the balance due. This resolution to be first submitted to Counsel for his approval before such payment be made."

Resolution carried. Ayes, 4, nays 0.

Mr. Kenney offered the following resolution:

"That the sum of $50.00 be paid to Earle & Dougherty , contractors, in full settlement of balance of $100.00 due them under their contract for the fifth section, the Engineer having reported that it has cost $50.00 to place defective manholes left by them in good condition. This resolution to be first submitted to Counsel for his approval before such payment be made."

Carried. Ayes 4, nays. 0.

Mr. Kenney moved that the Engineer be instructed to take up the matter of sewerage for South Orange Township with the Engineer of South Orange Township for the purpose of having the plans for their system modified so as to meet the requirements of the Joint Meeting. Carried. Ayes 4, nays 0.

Mr. McCoy offered the following resolution:

"A Rule regulating the Connection with the Joint Trunk or Outlet Sewer.

"Be it Resolved, That no municipality not a party to the Joint contract and not represented in the Joint Meeting shall be allowed to connect with the Joint Trunk or Outlet Sewer, until and after their plans and specifications showing sizes of pipes shall have been approved, in writing, by the Engineer of the Joint Meeting and the work of constructing the sewers to be approved, by the said Engineer. The expense of such inspection to be borne by such municipality."

Carried.

Moved that the present mode of use of horse and wagon be continued. Carried.

The following bills were read and ordered paid:

F. R. Sandford	$100.00
G. W. Hayward	80.00
Alexander Potter	166.66
F. R. Sandford	100.00
G. W. Hayward	80.00
Alexander Potter	166.67
Cone & Dawes	19.20
N. Y. & N. J. Telephone Co.	28.80
F. R. Sandford	15.55
E. D. Tuttle	12.00
Noonan Bros.	5.00
R. A. Gardner	40.50
Schultz-Gasser Co.	166.00
Sessions Foundry Co.	203.60
E. D. Tuttle	75.00
William Rollinson	50.00
Motor Electric Equipment Co.	6.00
J. Colyer & Co.	6.00
G. W. Hayward	4.00
E. D. Tuttle (petty cash)	257.53
E. L. Carter	10.61

Adjourned.

E. D. Tuttle,
Secretary.

Joint Meeting of December 14, 1905.

Roll called, all present except Summit and Millburn. Minutes approved as printed.

The following communication from Henshaw Bros. of Springfield was read:

"Dec. 4, 1905.

"Mr. E. D. Tuttle,
"Irvington, N. J.

"Dear Sir:—The undersigned is the owner of property in Springfield on the line of the Joint Sewer, Morris Ave., near the Summit line. I wish to make connection with the sewer from my residence, and as per agreement between the Joint Sewer Commis-

sion and Springfield, I am ready to comply with terms of assessment, etc.

"I have had some delay in enquiring in this matter. Hence should feel obliged to you if you would give this matter your kind attention as soon as possible.

"Awaiting your favor,

"Yours truly,

"W. HENSHAW."

Mr. Kenney moved that the communication be referred to Counsel and Secretary to communicate with Henshaw Bros. Carried.

The Engineer's report was read and filed:

"Joint Meeting,

"South Orange, N. J.

"Gentlemen:—I beg to present my usual report of conditions and matters relating to the Joint Trunk Sewer.

"In response to an inquiry from the Chairman of the Joint Meeting I prepared a report upon the admission of South Orange Township to the Joint Trunk Sewer, which report is now in the hands of the Chairman and should be considered as a part of this report.

"Since the last meeting I have given instruction to the inspectors especially to go over the Joint Trunk Sewer in its entirety with a view of locating any and all leaks which could be discovered, and have myself given time especially to this matter. No new leaks have developed since the last examination made, but on the other hand the leaks then discovered have not entirely silted up and should therefore receive especial attention. On the lower sections of the sewer no leakage whatever has been discovered. On Section 3 in the tunnel a small leakage still exists near the manhole at Headleytown, which will be remedied at once. Another small leak has been discovered on Section 4, near weir manhole No. 35, and another near weir manhole at Marion Avenue. We have for some time been watching these leaks to see whether they would silt up and thus save special repairs, but, while the ground water at the present time is so slight that the leaks at the present time are exceedingly small, I still believe that as soon as the ground water reaches its normal level these leaks will be as great as ever, and I therefore think it advisable in view of the dry condition of the ground to repair these leaks at this time, as it can now be done at a much less expense than after the ground water reaches its normal again.

"Through Elizabeth and Union Township I have at various times noticed persons tampering with the manholes for the pur-

pose of taking water from the sewers for use in building and well-driving, etc. While in no case has this tampering hurt the sewer, still, in case an accident should occur due to the imperfect replacing of the manhole cover by these persons, it might be difficult to place the blame or to get any acknowledgment from the people so tampering. An instance of a badly replaced cover was reported to me recently in just such a case by one of the inspectors. When asked for his permit to use the water of the sewer, the man using the water stated that he had one verbally but not in writing. I would recommend, in order that all difficulty may be avoided, that all street superintendents and others having the right to give such permission to use the sewers, shall be notified to do so in writing, and in no case verbally, in order that a record shall be kept and persons so using the sewers can be identified and held responsible.

"I also find it necessary to call the attention of the Joint Meeting to the question of the responsibility for raising manholes on the Joint Trunk Sewer when villages and municipalities through which the sewer runs decide to change the grade of the street from that which existed when the sewer was built. In each individual case the expense of putting on a few tiers of brick is not great, probably not more than two or three dollars, but as these changes in the grade might be continuously made by the municipalities, the bill in the aggregate might amount to quite a large sum. There are two or three special cases at present awaiting your decision in this matter, one of which is in the Village of South Orange, and several in the Vailsburg portion of Newark.

"The general condition of the Joint Sewer is very satisfactory, and the general growth and new buildings being erected along all the contributing lines of this sewer is noteworthy, as indicating the great benefit which this public utility has been to the various communities contributing in a financial, as well as in a sanitary, way.

"Respectfully submitted,

"Alexander Potter."

Mr. McCoy moved that the question of Deep Cut connections in the City of Elizabeth, if made contrary to the agreement with the City of Elizabeth, be referred to Counsel with instructions to take such steps as will protect the interests of the Joint Body. Carried.

Mr. Sharp moved that all persons not in the employ of the Joint Meeting be prohibited from removing any manhole covers on any of the manholes of the Joint Sewer and that the Secretary be directed to notify all officials in charge of any municipality of such motion. Carried.

Moved by Mr. Baumann that the various municipalities be notified that where grades are changed in the streets and manholes of the Joint Sewer have to be altered, that such municipality notify the Joint Meeting and the Joint Meeting will do the work and charge the cost thereof to such municipality. Carried.

Moved by Mr. Kenney that such leaks in the sewer as were reported by the Engineer be repaired at once. Carried.

The following letter from the South Orange Township Committee was received:

"Maplewood, Nov. 16, 1905.

"Francis Speir, Esq., President,
"Joint Trunk Sewer.

"Dear Sir:—Application has been made by the Township Committee to both West Orange and South Orange Village for additional space in the joint sewer.

"This Committee would like (assuming the figures to be public property) to be informed as to cost of the portion of the joint sewer originally allotted to the Township, and assumed by other municipalities, and whether this space has been retained in full in the construction of the system. It is also necessary for us to know what other municipalities than those named above, if any, would be interested, in case a plan can be devised for connecting our entire Township. Can we obtain this information from your Commission or its Engineer, as a basis to prepare the question for proper discussion?

"It is now a matter of great importance that we get this sewer project under way, and any suggestions you can make to expedite matters will be appreciated.

"Yours,
"W. H. Kempin,
"Chairman,
"Sewer Committee."

Moved that this communication be referred to Engineer. Carried.

The Engineer presented the following report as replying to the communication from South Orange Township:

"New York, Nov. 28, 1905.

"Mr. Francis Speir, Jr.,
"Chairman of the Joint Sewerage Commission,
"South Orange, New Jersey.

"Dear Sir:—I duly received your letter transmitting to me the correspondence between yourself and the Chairman of the Sewer

Committee of South Orange Township, in relation to the question of the admission of South Orange Township into the Joint Sewer, and I beg to report as follows:

"The allotment of South Orange Township in the original apportionment was 1,000,000 gallons per day in round numbers, and the cost of this capacity would have been $42,000, approximately, based upon the actual cost of the sewer, together with its share of operating expenses, which with South Orange Township as participant, would be in the vicinity of $600 per annum.

"The successive increases in the capacity of the Joint Sewer due to the provision for ground water infiltration, increase for Morristown, etc., would have entitled South Orange Township to a capacity of 1,500,000 gallons, for which it would have paid about $64,000. Having let the opportunity to enter into this joint contract go by, they cannot avail themselves of its advantages, excepting with the consent of the other municipalities. This question as to where this municipality can look for this capacity is all important.

"The indications are that Newark has no capacity to sell, as a certain section of Newark is already contributing its full quota. This is interesting when it is remembered that Newark was the only town that objected to the original allotment suggested by me as being too great.

"Irvington being adjacent to the City of Newark, will hesitate a long while before disposing of any of its capacity, as it will be but a short time before it will become a component part of the City of Newark, and the extravagant use of water in Newark will likely lead to a similar extravagance in Irvington, in which event with the rapid growth of the town, due to the introduction of sewers, they will not be likely to part with any portion of their capacity. An exception, however, might be made for a restricted area in Hilton, and I think that the Township can perhaps figure on making arrangements with Irvington for the care of this restricted area in the future at a fair value.

"Summit is not likely to dispose of its extra capacity, as they hope that Morristown will enter this joint project and help it to build a tunnel through the mountain and thus obviate the necessity of maintaining a pumping station, which is costly and annoying.

"The Township of Millburn is now using the biggest percentage of its capacity. It is true that the largest contributors are the mill owners and that these mills may not always remain in Millburn, but until the question of the mills in Millburn Township is settled it would be unwise for them to consider parting with any of their capacity, excepting that it would be a neighborly thing for them to take care of a small portion of Ridgewood Road in South Orange Township, which naturally drains toward the Millburn sewers, at a fair value.

"This leaves West Orange and South Orange Village as the only two municipalities to whom South Orange Township can look for the required capacity. Of these two, South Orange has a restricted area, and there is some possibility of conjecturing what its ultimate growth within its present limits might be. On the other hand, West Orange has within its territory a large undeveloped area, the extent of the future growth of which it is utterly impossible, at the present time, to determine. This being the case, they have no desire to deed away a valuable asset already paid for, which might cost them many times its original cost to replace when required. The individual members of the Council have seriously objected to the giving away any capacity whatever, and I think that these members have thus forecasted the official action of this Board.

"South Orange Village has a capacity of 3,400,000 gallons in the joint trunk sewer and it seems to me that for all present and prospective requirements of this Village, even when thoroughly built up, will not exceed 2,300,000 gallons. Practically all the streets within the limits of the Village have been sewered, and therefore the possibility of large increase in the flow of the sewers from leakage is eliminated, and the flow from any possible increase in the number of houses cannot, in my judgment, exceed from two to two and one-quarter million gallons of water per day. The Village, therefore, can with justice to themselves dispose of 1,000,000 gallons on whatever terms it may consider advantageous without jeopardizing the interests of the Village. The Township already has an agreement with the Village to permit 500 houses using the sewer. This is an impractical agreement, for in it there is no restriction as to the permissible leakage and it is quite possible under this agreement for the Township to build so many and such leaky sewers as to use up during the wet season the entire capacity South Orange has in the joint trunk sewer without any restriction on the part of the Village, save that it receives under the rules and regulations of the joint trunk sewer, which is that in such a case as South Orange Township, the entire construction shall be under the inspection of the Engineer of the joint sewer.

"It seems to me, therefore, that South Orange Township's course should be to take up the question of securing this needed capacity from South Orange Village.

"I have gone carefully over the situation in South Orange Township and feel that if the sewers are properly constructed and the leakage reduced to practically nothing, as is possible under recent improvements inaugurated upon the work for these municipalities, that the million gallons available from South Orange is sufficient for all possible needs of the Township.

"Respectfully submitted,

"ALEXANDER POTTER."

Motion report be received and filed, and copies sent to both South Orange Township and South Orange Village. Carried.

The following resolution was passed:

"Resolved, That the several municipalities do raise and pay to the Treasurer of the Joint Meeting the sum of $2100, which shall be assessed upon the Joint Municipalities in the proportion fixed by the contract between the several municipalities as provided for the care and maintenance of the Joint Sewer, i. e., each municipality to the Joint Contract paying an equal amount or one-seventh of such assessment, and further that the Secretary be directed to notify the various municipalities of said assessment and the portion to be paid by each; and be it further

"Resolved, That said moneys be paid to the Treasurer of the Joint Meeting within 20 days of the 14th day of December, 1905."

Roll called; resolution adopted, ayes 4, noes 0.

The following bills having been properly audited were read and ordered paid:

F. R. Sandford	$100.00
G. W. Hayward	80.00
Alexander Potter	166.66
F. R. Sandford	100.00
G. W. Hayward	80.00
Alexander Potter	166.66
E. D. Tuttle	12.00
Wm. Rollinson	50.00
E. D. Tuttle	75.00
Schultz & Gasser	10.50
G. W. Hayward	8.60
F. R. Sandford	100.00
Alexander Potter	166.67
G. W. Hayward	80.00
C. V. Baumann	20.00
Francis Speir, Jr.	20.00
Frank R. Sharp	25.00
Walter I. McCoy	20.00
Richard Hopkins	20.00
John J. Kenney	25.00
E. C. Doty	5.00

Adjourned.

E. D. Tuttle.
Secretary.

Joint Meeting of March 22, 1906.

Roll called. Present: Chairman Francis Speir, Jr.; Irvington, A. E. Webb; Millburn, Richard Hopkins; South Orange, Mr. Allen; West Orange, J. J. Kenney.

Minutes of December meeting approved as printed.

The Chairman appointed as auditing committee Messrs. Kenney, Hopkins and Webb.

The report of the Engineer was read and on motion ordered printed in the minutes:

"March 20, 1906.

"Joint Meeting:

"Gentlemen:—

"Since the last meeting continuous observations, examinations and records have been kept up on all sewers both by myself and my engineering force and by the inspectors. Especially have I endeavored, as far as possible, to determine what the requirements of the various municipalities will ultimately be within a reasonable period of futurity, based upon recent observations upon the sewer and of the almost phenomenal growth of the towns themselves since the sewer was completed. The flow in many of the sewers from October to March of this year has proved to be less than the flow in those same sewers from March, 1905, to October, 1905. This would in general indicate that throughout the Joint Sewer there is occurring a gradual diminution in the amount of ground water infiltration, as during this period there should occur a greater normal flow than was found to exist in the sewer during the previous six months. Of course in making this broad assertion, it must be borne in mind that the meteorological conditions have been very extraordinary and that there has been less ground water to get into the sewer this winter than during a like period for a number of years, so that this reduction in flow may only be of a temporary nature. An examination of the records would indicate that this diminution of flow is not confined to any particular section, but it is quite general throughout the entire limits of the Joint Trunk Sewer. The greatest increase of flow on any one section is that found on the South Orange and West Orange branch, which is due to the completion of the low-level sewer in West Orange and the pumping of this sewage into the trunk lines communicating with the Joint Sewer proper.

"Examinations have been made as to the effect of the increased discharge of sewage into Staten Island Sound, but there seems to be no appreciable effect upon the waters of the Sound. This is more than can be said for outlets of sewers from the City of Elizabeth, although those sewers drain a much smaller territory than does our Joint Trunk Sewer.

"While the vast majority of the houses constructed within the limits of the sewer district are connected with the sewers, with the exception of the City of Summit, it is yet too early to conjecture what the ultimate requirements of the various cities may be. With the exception of South Orange Village and Newark, the undeveloped areas within the limits of the various municipalities are extensive, and what the future development of this undeveloped and unimproved territory may be is at this time difficult to conjecture. Even in the Village of South Orange the character of the improvements are different from what might normally have been expected. During the last year about one hundred and fifty houses of the smaller type have been constructed, and if the building improvements in South Orange continue along similar lines, then the growth within the present limits of the Village will be greater than was heretofore reckoned upon judging from the former character of the building in the Village.

"As is well known, the Township of South Orange is practically without sewerage facilities, and in a previous recommendation and report made by me, I pointed out that the municipality which could most logically provide sewerage facilities to the Township would be the Village of South Orange. I have at this time no reason to modify my report upon this matter.

"There has been distributed throughout the various municipalities a certain amount of excess capacity due to the increased capacity in the sewer on account of the City of Morristown and other towns west of Summit. These towns are now earnestly contemplating sewerage improvements and it will probably be a question of only a short time before Morristown, Madison, Chatham and perhaps Morris Plains will be coming before the Joint Meeting and the various municipalities comprising this body individually, to inquire whether or not there is capacity which can be placed, or which the municipalities are willing to place at their disposal. The matter of the quantity of flow from the various municipalities in the Joint Sewer is a very important one and one upon which will rest more or less the determination of this question of their admission, and I have therefore been making most careful observations in relation to this flow data.

"An examination of the table presented will show that on days of maximum flow after a rain storm that the sewer in many places is flowing one-half full. This condition can be modified by the extension of the closed manhole covers, but I have purposely delayed urging the individual towns to extend these closed manhole covers over their local systems because, until the individual houses are connected up, there is merit in having these local lines ventilated through the manhole covers.

"An accumulation of sand which was deposited through the year under and near the Rahway River crossing has been removed by the inspector at approximately $40.00 cost. Some of the

ropes used upon the sewer cleaning work have rotted or worn out and I have authorized Inspector Sandford to secure new rope to replace that which is worn out.

"The only serious stoppage which has occurred upon the Joint Trunk Sewer during the last six months occurred on South Orange Avenue between Halstead Street and Lillie Street. Upon investigation it was found that a shovel had been inserted in one of the manholes. How long this shovel had been in the sewer is problematical. It is certain, however, that it has been put into the sewer since its completion, because all tools of every kind and description used by the Contractor who built the sewer had the name of the contractor burned into the handle one-quarter of an inch deep. The shovel removed from the sewer has no markings of any kind whatever upon it.

"A number of other objects have been taken out of the sewer at different points, but these have not caused any stoppage of the sewer. The stoppage caused by the insertion of the shovel flooded two cellars on South Orange Avenue for a portion of a day.

"Mr. Adrian Riker, Counsel for the Joint Meeting, forwarded to me a letter from Mr. Conrad Wepler concerning the contamination of his spring by reason of the underdrain built by the contractor. I have made an examination of this spring with reference to this complaint and find that the water coming out of the spring is perfectly clear so that I had no hesitancy in drinking it. The underdrain, however, does come out in the vicinity of the spring and whether or not the existence of this underdrain affords a means of communication between the sewer and the waters of the spring can only be determined by a chemical examination of the spring water, if such is considered necessary by the Joint Meeting. I should like instructions from the Board upon this point. The contract for right of way with Mr. Wepler contains a clause that if the spring is at any time permanently destroyed there should be paid to him the sum of $500.00. I present herewith the letter from Mr. Wepler which was sent to me by Mr. Riker.

"I also present herewith tables showing data in relation to the flow in sewers from October, 1905, to March, 1906, inclusive.

"Respectfully submitted,

"Alexander Potter."

JOINT TRUNK SEWER.

TABLE SHOWING DATA IN RELATION TO FLOW.

From October, 1905, to March, 1906.

A	B	C	D	E	F	G
Bayway and North Ave.	4,770,000	21,000,000	All towns	23%	11,160,000	53%
Sec. 4, nr. Montrose Ave.	711,000	3,528,000	W. Orange	20%	1,908,000	54%
Sec. 4, nr. Parker Ave.	1,450,000	6,648,900	W. Or., Pt. S. Or.	22%	3,582,000	54%
Sec. 4, Millburn Ave.	1,668,000	6,648,900	W. O. and S. Orange	25%	3,834,000	58%
Sec. 5, Lyons Ave.	234,900	900,000	Pt. Newark	26%	315,000	35%
19th Ave. and 20th St.	162,000	650,000	Pt. Newark	25%	225,000	35%
S. O. Ave., nr 20th St.	61,200	535,300	Pt. Newark	11%	79,200	15%
Marion Ave.	112,500	300,000	Pt. S. O.	37%	204,300	68%
Sec. 5, nr. Orange Ave.	1,127,700	3,341,430	Pt. Newark, S. O., Irv.	34%	1,782,000	53%
Union Ave.	1,854,000	7,935,600	Pt. S. O., Newark, Irv.	23%	3,307,500	42%
Sec. 6, nr. Main St., Millburn	1,278,000	5,862,500	Summit, Pt. of W. O., Pt. Millburn	22%	2,628,000	45%
Sec. 6, Morris Ave., nr. Summit Ave.	612,000	4,227,300	Summit	14%	702,000	17%

Note.—A. Location of gauge.
B. Present average daily discharge, gallons.
C. Maximum allotted daily discharge.
D. Municipalities contributing.
E. Ratio of present average daily discharge to maximum allotted discharge.
F. Present maximum daily discharge.
G. Ratio of present maximum daily discharge to maximum allotted discharge.

This table supplements a similar table covering a period from March, 1905, to October, 1905, which is printed in minutes of October 19, 1905.

Mr. Kenney moved that the action of Engineer in ordering new ropes for cleaning be concurred in. Carried.

Moved that the Engineer, subject to the approval of Counsel, take up the subject of the "Wepler Spring," and if deemed advisable by Counsel to have the water examined. Motion adopted.

Inspector's report read and placed on file.

Secretary reported that Counsel had advised in answer to questions asked at last meeting by Mr. McCoy of South Orange that the intent of the contract with Springfield Township was to make a reasonable charge for making connections with the Joint Sewer, and that he would advise that a fixed amount to cover such charge be adopted, rather than an annual charge, and suggested that a charge of $25.00 per tap would be about right.

Moved that the Secretary have the necessary resolution prepared for making connections with the Joint Sewer, and that the charge be made $25.00, same to be ready for action at next meeting. Carried.

Moved that Henshaw Bros. be granted a permit to connect with the joint sewer on Morris Avenue, Springfield, and that the charge be $25.00. Adopted.

The following resolution was passed:

"Resolved, That the several municipalities do raise and pay to the Treasurer of the Joint Meeting the sum of $2100. Which shall be assessed upon the Joint Municipalities in the proportion fixed by the contract between the several municipalities as provided for the care and maintenance of the Joint Sewer, i. e., each municipality to the joint contract paying an equal amount or 1-7 of such assessment, and further, that the Secretary be directed to notify the various municipalities of said assessment and the portion to be paid by each; and be it further

"Resolved, That said moneys be paid to the Treasurer of the Joint Meeting within 20 days of the 22d of March, 1906."

Roll called. Resolution adopted: Ayes 4, noes 0.

The following communication was received from the Board of Trustees of the Village of South Orange:

COPY OF RESOLUTION PASSED BY THE BOARD OF TRUSTEES IN REGULAR MEETING, MONDAY, MARCH 19, 1906.

"Whereas, The Engineer of the Joint Meeting has stated to this Board that the leakage in the syndicate section of our local sewer system has, at times, exceeded the entire capacity owned by this Village in the trunk sewer running through Vailsburg, therefore, be it

"Resolved, That the Joint Meeting be requested to furnish this Board with a statement of the capacity owned by this Village in said trunk sewer, in percentage and in gallons, and if possible, in the number of inches in depth of flow in the pipe; also that this Board be furnished with a copy of any reports of the superintendent of the trunk sewer that may show a flow from our system into said trunk sewer in excess of our capacity; also that the Joint Meeting be asked to permit any authorized representative of this Board to inspect all reports of flow from our system into said trunk sewer, that have been filed with the Joint Meeting."

COPY OF RESOLUTION PASSED BY THE BOARD OF TRUSTEES IN REGULAR MEETING, MONDAY, MARCH 19, 1906.

"Whereas, The Township of South Orange has applied to this Village for the privilege of additional capacity in the trunk sewer running through the Township, and

"Whereas, This Board of Trustees is unable to determine a proper course of action with the information now in its possession; therefore be it

"Resolved, That the Joint Meeting be requested to furnish this Board with the following information:

"What were the sizes of pipes originally planned from the northerly line of South Orange Village to the Outlet?

"What was the capacity in percentage and in gallons originally allotted to this Village and to South Orange Township in each of the sections?

"When South Orange Township withdrew were the sizes of pipes changed? If not, what additional capacity, if any, in percentage and gallons was allotted to this Village in each section, and covered in the joint contract?

"As actually constructed, we understand that the size of pipes in the several sections are greater than specified in the joint contract. If so, what are the sizes existing from northerly line of South Orange Village to the outlet?

"What is the capacity in percentage and in gallons, belonging to this Village in each section of the sewer as constructed?"

The above communication was read and on motion was referred to the Engineer, who was directed to furnish the information asked for by South Orange. Adopted.

The following communication was received from Chas. E. Hendrickson, Jr., representing Jas. P. Hall, contractor for the 4th section:

"Mr. E. D. Tuttle,
"Irvington, N. J.
"My Dear Sir:

"I represent, as Attorney, Mr. James P. Hall, who was the contractor of Section 4 of the Joint Outlet Sewer for Irvington, South Orange, etc. Mr. Hall filed a claim for some extras amounting to the sum of $623.83, consisting of four separate charges, one for extra work at a florist's, one for delay at the Lackawanna crossing, one for extra work on Meadowbrook Lane and another for money paid the Trolley Company. I write to ask you

to please return to me these four bills as I wish to see what is the trouble with them. I have a letter from Mr. Potter, the Engineer, dated May 13th, 1904, in which he speaks as follows: 'I beg to state that I have presented these bills to that body and O. K.'d them so far as the work done is concerned. Mr. Riker, however, holds that the Board has no legal obligation which binds them, consequently that has passed beyond me. I have talked with Mr. Riker over the telephone and he tells me that Mr. Potter did not O. K. these bills and therefore they have not been paid.

"I will appreciate very much your favor if you will return these bills to me.

"Yours very truly,
"C. E. Hendrickson, Jr."

The above communication having been read was on motion referred to Counsel.

The following communication was received from Keast Brothers of South Orange, which was read and, on motion, referred to Counsel:

"Jan. 18, 1906.

"Mr. E. D. Tuttle,
"Secretary, Joint Sewer Commission.

"Dear Sir:

"We have a claim against the Joint Sewer Commission for damage done to our lawns in South Orange, N. J. Mr. Potter called us up on the 'phone more than two months ago, telling us that if we would settle for fifty dollars he would send us a check. We agreed to take the amount in settlement if check was sent to us right away. Will you kindly advise us if you know anything regarding this matter, in order that we may know just how we stand before the Commission, or if it will be necessary for us to bring suit. This matter of damage to us is about two years old and cost us more than a hundred and fifty dollars to repair, and we think it time to have a settlement.

"Yours truly,
"Keast Bros."

The following bills having been properly audited were read and ordered paid:

F. R. Sandford, Salary for Jan.	$100.00
G. W. Hayward, Salary for Jan.	80.00
Alex. Potter, Salary for Jan.	166.66
F. R. Sandford, Salary for Feb.	100.00
G. W. Hayward, Salary for Feb.	80.00
Alex. Potter, Salary for Feb.	166.67

Thos. A. Sandford	5.00
Jos. Colyer & Co.	2.50
E. W. Price	6.50
E. D. Tuttle, Sec., rent office	12.00
R. A. Gardner	40.75
Mrs. Joseph Birney	5.00
Noonan Bros.	5.00
E. D. Tuttle, Sec., Salary	75.00
Wm. Rollinson, Treas., Salary	50.00
Alfred Rows	6.72
Theo. C. Vonners	2.00
H. B. Halsey & Co.	5.25
David Cochran	.75
Chas. I. Beck	12.61
Geo. W. Hayward	8.55
F. R. Sandford	17.60
E. D. Tuttle, Sec., Petty Cash	303.54
Cone & Dawes	29.90

The following communications having been received since the last meeting.

Bills of N. Y. & N. J. Telephone Co. and Jas. A. Christie were read and laid over.

There being no further business the meeting adjourned.

E. D. Tuttle,
Secretary.

LETTERS TRANSMITTED TO THE SECRETARY SUBSEQUENT TO THE MEETING.

"April 13, 1906.

"E. D. Tuttle, Esq.,
"Sec't Joint Meeting,
"Care Sargeant & Co.,
"Newark, N. J.

"Dear Sir:

"Enclosed please find two communications from the chief engineer addressed to me as chairman of the Joint Meeting, dated April 11th and 12th respectively. These should be printed in full on the minutes. Copies of these letters I have to-day sent to the President of the Village of South Orange, in answer to a request for information presented to the Joint Body at its last meeting.

"Very truly yours,
"Francis Speir, Jr.,
"Chairman."

"April 12th, 1906.

"Francis Speir, Jr., Esq.,
"Chairman Joint Sewerage Commission,
"52 Wall St., New York City.

"Dear Sir:

"In response to the request of the Joint Meeting that I furnish the information required under the resolution passed by the South Orange Village Board, I beg to report as follows:

"(a) 'What were the sizes of pipes originally planned from the northerly line of South Orange Village to the outlet?'

"18 in. from the West Orange line to South Orange Avenue.
"20 in. from South Orange Avenue to Millburn Junction.
"22 in. from Millburn Junction to Irvington Junction.
"30 in. from Irvington Junction to the Outlet.

"(b) 'What was the capacity in percentage and in gallons originally allotted to this Village and to South Orange Township in each of the sections?'

"The capacity measured in the percentage of the whole of South Orange Village in the Joint Trunk Sewer was 14.32 per cent.; of South Orange Township 9.66 per cent. Measured in gallons per day; South Orange Village, 2,138,000; South Orange Township, 1,440,000.

"(c) 'When South Orange Township withdrew were the sizes of pipes changed? If not, what additional capacity, if any, in percentage and gallons, was allotted to this Village in each section, and covered in the joint contract?'

"The sizes of the pipes were not changed when South Orange Township withdrew. The size of the sewer from South Orange Village to the Millburn Junction is still large enough to meet all requirements of South Orange Township. Its quota was distributed among all the other towns except Summit, which town did not desire to increase her holdings. The effect of the Township's withdrawal was to increase the Village holdings as follows:

"Outlet to Irvington Junction, 289,900 gallons.
"Irvington line for Syndicate Section, 28,990 gallons.
"Irvington Junction through S. O. Township, 260,910 gallons.

"(d) 'As actually constructed, we understand that the sizes of pipes in the several sections are greater than specified in the joint contract. If so, what are the sizes existing from northerly line of South Orange Village to the outlet?'

"The sewer as actually built is greater than the sewer called for in the joint contract. The increase was made for the purpose of affording capacity for Morristown. This additional capacity was distributed among all the other towns in the proportion of their holdings under the contract. The present sizes of the sewer from South Orange Village southern line are as follows:

"From West Orange line to South Orange Avenue, 22 inches.

"From South Orange Avenue to Millburn Junction, 24 inches.

"From Millburn Junction to Irvington Junction, 30, 36, 38 and 43 inches.

"From Irvington Junction to the outlet, 42, 66 and 72 inches.

"(e) 'What is the capacity in percentage and in gallons, belonging to this Village in each section of the sewer as constructed?'

"In reply to this question I have assumed that if this matter is of interest to South Orange Village, it will also be of equal interest to all the other municipalities composing the Joint Body, and I have, therefore, prepared the following table, setting forth this information in reference to all the municipalities composing the Joint Body:

MAIN TRUNK SEWER, Sections 1 and 2—X. A.

Summit, 20.13%	4,227,300	gallons
Newark, 9.93%	2,085,300	"
Irvington, 16.06%	3,372,600	"
West Orange, 16.80%	3,528,000	"
South Orange, 16.29%	3,420,900	"
Millburn, 10.42%	2,188,200	"
Vailsburg, 10.37%	2,177,700	"
Total	21,000,000	"

Exclusive of Roselle Park and Union Township.

EAST BRANCH, Section 5—A. Q. T.

Newark, 26.18%	2,085,300	gallons
Irvington, 42.35%	3,372,600	"
Vailsburg, 27.33%	2,177,700	"
South Orange, 4.14%	329,700	"
Total	7,965,300	"

WEST BRANCH, Main Stem—A. B. Section 3.

Summit, 32.43%	4,227,300	gallons
West Orange, 27.07%	3,528,000	"
South Orange, 23.71%	3,091,200	"
Millburn, 16.79%	2,188,200	"
Total	13,034,700	"

WEST BRANCH, W. O. and S. O. Line—B. K. L. Section 4.

South Orange, 49.07%	3,091,200	gallons
West Orange, 50.93%	3,205,200	"
Total	6,296,400	"

West Branch, Summit-Millburn Div.—B. I. Section 6.

Summit, 62.74%	4,227,300	gallons
Millburn, 32.47%	2,188,200	"
West Orange, 4.79%	322,800	"
Total	6,738,300	"

"Yours respectfully,
"Alexander Potter,
"Chief Engineer."

"Francis Speir, Jr., Esq.,
"Chairman Joint Sewerage Commission,
"52 Wall St., New York City.

"Dear Sir:

"In reply to the questions regarding the capacity of South Orange in the Syndicate Section, I beg to report as follows:

"The capacity of South Orange Village in the Fifth Section of the Joint Trunk Sewer is 4 14-100%, or a capacity of 329,700 gallons. This gives an available depth of flow at the point where the measurements are taken of 3 5-8 inches.

"Information concerning the flow at this manhole is recorded on about two hundred charts on file at the office of the Engineer of the Joint Sewer and open for inspection at any time to any one to whom the Joint Sewerage Commission shall give permission. The inspection of these diagrams shows that the amount of flow at the point where South Orange Village flow is measured has been as high as 600,000 gallons, and during the present month has run as high as 395,000 gallons.

"Respectfully submitted,
"Alexander Potter,
"Chief Engineer Joint Sewer.

"Maplewood, March 24, 1906.

"Mr. Francis Speir,
"President Joint Meeting,
"South Orange, N. J.

"Dear Sir:

"Can we obtain from the Joint Meeting the following information to enable this Committee to properly formulate application now being made for space in the Joint Sewer sufficient for the future needs of South Orange Township?

"1. What was the original percentage of capacity allotted to the Township?

"2. What section of the Joint Trunk would this percentage apply to and the proportion of each?

"3. Which municipalities assumed the cost of space originally allotted to this Township and are the owners of such percentage of capacity?

"4. Which municipalities should this Committee apply to for capacity sufficient for the future wants of South Orange Township; and what would be the percentage of capacity required from each of such municipalities?

"The existing contract between the Village of South Orange and the Township proves impractical upon an attempt to apply it to a local system of laterals, and negotiations have been started with the Village for a percentage of capacity in substitution of this contract. In this connection the whole question of the future needs of our Township should be determined, and for the reason that resolutions passed by the Joint Meeting make it incumbent upon municipalities connecting with the Joint Sewer to have their plans approved by the Jiont Meeting and the work of construction done under its supervision, this Committee requests that you furnish us such data as will show the particular section of the Joint Sewer to which the eastern and western portions of the Township naturally drain, and the percentage of capacity that would be required by each of the two sections.

"If the position of our community is not thoroughly understood by the members of the Joint Meeting, this Committee would appreciate an opportunity to make our wants clearly understood. We must settle this question promptly and we appeal to the officials of the Joint Meeting for all the assistance possible.

"Yours truly,

"William H. Kemp,
"Chairman Sewer Committee."

"April 5, 1906.

"William H. Kemp, Esq.,
"Chairman Sewerage Committee
"Township of South Orange,
"Maplewood, N. J.

"Dear Sir:

"I am in receipt of your favor of March 24th to me as Chairman of the Joint Meeting, making inquiries as to South Orange Township's former position toward the joint trunk sewer.

"When a joint trunk sewer was first considered, a report thereon was made by Alexander Potter, dated September 29, 1899, on the general plan of the sewer now built, but much smaller. The size of the sewer as described in this report was of the diameter of 30 inches from the outlet on Staten Island Sound to the junction of the Vailsburg-Newark-Irvington branch; from Millburn Avenue to South Orange Avenue 20 inches. The sizes of the pipe were calculated to afford sewerage for a future population of 106,380 in the municipalities then contemplating building it, the future population of South Orange Township therein being estimated at about 14,000 people. (See Appendix, Vol. I.)

"The total capacity in such joint trunk sewer to be set off to

the Township of South Orange amounted to 10.1 per cent. The estimated use of the sewer was based on an approximate consumption of 70 gallons per day per capita. When the trunk sewer was built it was greatly increased in size and capacity.

"The Township of South Orange had expressed the intention of joining with the other municipalities in the construction of the joint trunk sewer and an identical contract and ordinance had been drawn and printed for each of the eight separate municipalities, including the Township of South Orange.

"In that proposed contract and ordinance are set forth the facts and figures about which you inquire, and I think that it can be described as the original capacity allotted to the Township.

"With this preliminary explanation, I will take up your questions.

"Q. 1. What was the original percentage of capacity allotted to the Township?

"A. The joint contract and ordinance presented to the Township of South Orange for passage, gave to the Township of South Orange, in the main trunk sewer from the outlet to the junction with the Newark-Irvington-Vailsburg sewer, 9.66%, or 1,439,725 gallons per diem.

"Q. 2. What section of the joint trunk would this branch belong to, and the proportion of each?

"A. On the Irvington-Newark branch the Township of South Orange had 5.08%, or 308,512 gallons per diem; on the South Orange-West Orange branch of the sewer the Township had 22.35%, or 1,131,213 gallons per diem.

"Q. 3. Which municipalities assumed the cost of space originally allotted to this Township, and who are the owners of such percentage of capacity?

"A. In the joint trunk sewer from its outlet to the junction the remaining seven municipalities assumed the cost and divided the capacity; in the Newark-Irvington-Vailsburg-South Orange syndicate branch the four last named municipalities assumed the cost and divided the capacity; in the West Orange-South Orange branch West Orange and South Orange assumed the cost and divided the capacity.

"Q. 4. Which municipalities should this Committee apply to for capacity sufficient for the future wants of South Orange Township and what would be the percentage of capacity required from each municipality?

"A. On a future population in the Township of 14,000, the Engineer figured that the Township would need for Hilton, draining into the watershed of the Elizabeth River, 5.08% of that branch, or 308,512 gallons per diem. This quantity is now owned by the four municipalities of Newark, Vailsburg (now Newark), Irvington and South Orange Village. An application could be

made primarily to Irvington therefor. Maplewood and the portion of South Orange Township lying within the watershed of the Rahway River can only be afforded sewerage facilities from the West Orange-South Orange branch, these last two municipalities having about evenly divided the quota between them, and as they are the owners of the capacity no capacity could be obtained by the Township except under contract with these municipalities, or either of them.

"The ownership in the Joint Trunk Sewer is an individual ownership and capacity therein is separately owned by each municipality. It is believed that the capacity is ample to cover all needs for many years, and that capacity can be very greatly increased by the building of storage tanks, in order to take advantage at some subsequent time of the comparatively decreased flow at night.

"The cost of the sewer is as follows:

"1. From the outlet to the junction of the Irvington sewer, known as X A, the cost was ..... which was paid by seven municipalities.	$342,872.00
"2. The east branch of the sewer, designated A Q T, for Irvington, Newark, Vailsburg and South Orange, cost	127,038.22
"3. The west branch, designated A B, for the use of Summit, Millburn, South Orange and West Orange, cost	195,380.72
"4. The west branch, designated B I, for the use of Millburn, Summit and West Orange, cost	74,791.00
"5. The west branch sewer for South Orange, West Orange, designated B K L, cost	72,302.37
being a total of ..... which has been swelled by construction bills paid during the period of maintenance, amounting to the additional sum of	$812,565.31 1,480.19
making the cost of the joint trunk sewer	$814,045.50

"By reference to the map attached to the final report of Alexander Potter, which you have, you will see the places indicated for laterals running up from the Newark-Irvington branch easterly to the Township line near Hilton, and which it was proposed to have built by the Joint Body as separate branches of the joint trunk sewer.

"Any further information that you need I would be pleased to give you. The Engineer is now engaged in the preparation of data which the Village of South Orange called upon the Joint Body, at its last meeting, to furnish to them. This will probably be available for your information at a future time.

"Very truly yours,

"Francis Speir, Jr."

"P. S. The contract provided that the Township of South Orange should pay the cost of '1,' 9.66 per cent.; cost of '2,' 5.81 per cent.; cost of '3,' 11.71 per cent.; cost of '5,' 22.35 per cent. With this data you can figure out what would have been the exact cost to the Township of South Orange if the contract had gone through."

"April 14, 1906.

"Mr. Francis Speir, Jr.,

"Chairman, Joint Sewerage Commission.

"My Dear Sir:

"Your favor of 13th inst. at hand, enclosing statements by your Chief Engineer which seem to fully answer the inquiries propounded by the Village Trustees and for which please accept thanks.

"Our resolution also asked the Joint Body to grant permission to any authorized representative of our Village to examine the reports on file as to the flow of sewage. Mr. Potter refers to those charts and says they may be examined if the Joint Body shall 'give permission.' We ask for such permission.

"We have been informed that there is no known method of automatically obtaining, with any degree of accuracy, registration of the volume of flow of sewage. Under the circumstances we wish also to ask if there is any record on file with the Joint Body, that at the point of connection of our syndicate system with the trunk sewer, there has existed a flow in depth of inches in excess of our quota?

"Yours very truly,

"Rob't. S. Sinclair.

"President."

Joint Meeting of April 26, 1906.

Meeting called to order at 8 o'clock P. M.

Roll called. Present: Chairman Speir, and representatives from South Orange, West Orange, Millburn, Summit, Irvington.

The minutes of last meeting were approved as corrected.

Engineer's report read and placed on file:

"The Joint Meeting,

"South Orange, N. J.

"Gentlemen:—I beg to report upon the Joint Trunk Sewer as follows:

"During the past month we have continued to observe the flow in the sewer as there has been a larger amount of ground

water during March and April than at any other time during the year.

"The result of these examinations clearly points out the necessity of some action on the part of the Newark and Irvington authorities to curtail the flow of surface water, ground water and cellar drainage into the sewers. I have taken this question up with Mr. Riker and he reiterates his former opinion that the Joint Meeting has nothing to do with the control of the manner in which connections are made to the local system draining into the Joint Trunk Sewer, but that when any town reaches its maximum capacity that at that moment notice should be served upon the offending municipality to the effect that further connections cannot be made. The trouble with Newark and Vailsburg is that the authority of the engineer in charge of the work ceases upon the completion of the sewer and thereafter the control of the sewer is vested in the General Superintendent of Works, and also with the Board of Health, who do not realize the importance of making any distinction between the system of sanitary sewers and the balance of the Newark sewerage system, where both the storm water and sewage is cared for.

"It was because of my realization that this would occur that I originally apportioned so large a capacity for the City of Newark which you will remember was objected to by the Newark engineer and finally reduced on his recommendation. I have taken this matter up with the engineer of Newark, and he has promised his co-operation in endeavoring to reduce and eliminate this improper use of our sewers. It is a common thing throughout the Vailsburg section just as soon as the excavation for the foundation of a new building is started for the sewer connection to be made, which is used to drain off the water from the excavation, which drain carries into our joint sewer large accumulations of mud and dirt which we are forced to clean out.

"The Joint Trunk Sewer was never designed for this purpose, and the added expense of this unnecessary and unforseen work was not counted upon originally.

"I would recommend that the Secretary communicate these facts to the General Superintendent of Works and also the Board of Health of Newark in order that they may be officially acquainted with the conditions existing. The Rules and Regulations of the Joint Trunk Sewer require 4-inch connections, but the plumbers are in the habit of immediately starting out with an increaser at the sewer and running to the house with a 6-inch pipe, laid oftentimes in a most careless and slovenly manner, thus inviting leakage of the ground water into the sewer.

"In reply to the letter of April 14 from the President of the Village of South Orange, in regard to the examination of records in my office. These records are open for the inspection of any one connected with the various towns interested in the Joint Trunk

Sewer, or to any one coming to my office with a letter from any official, either of the Joint Trunk Sewer or any of the municipalities interested in the Joint Trunk Sewer.

"I send herewith a bill from the McGraw Publishing Company which has remained unpaid for some time, due to my overlooking same. When the Joint Meeting ordered an additional number of the reports printed I found that the plates had been destroyed and that it was necessary to make these over a second time; this bill is for the making of these plates and also the printing of same. I would recommend the payment of this bill.

"Yours very truly,

"ALEXANDER POTTER."

Moved that the Secretary be directed to communicate with the Superintendent of Works and the Board of Health of the City of Newark, and call their attention to the conditions as reported by the Engineer. Carried.

The following communication from the Montrose Land Co. was read and on motion referred to Counsel:

"New York, April 24, 1906.

"Francis Speir, Jr., Esq.,

"Chairman Joint Sewer Committee.

"52 Wall Street, City.

"Dear Sir:—We desire to call your attention to the fact that the macadamized roadbed of Meadowbrook Lane north of Mountain House Road has never been restored by the sewer contractor to its original condition. The grading of this road was also never restored to its original condition. When we gave the right of way to your Commission it was stipulated in the contract that the road should be restored to its original condition after the work was completed, and we must look to you to see that this is done as we have no claim against the contractor. When the work was started the road was well graded and had been macadamized six inches deep. There is now very little of the macadamizing left and the grading has been left very uneven. We understand that the sewer contractor claims that this is the result of subsequent work and the laying of the gas main. This claim is not warranted, as the grading on the road and the macadamizing on the road had been entirely destroyed before the gas main was laid, and so far as we can observe the gas company did restore the road as they found it, which was certainly in a poor condition. The right of way over this road (which is not a public street) was granted free of charge to your Commission and we feel that we should not have been obliged to wait this long time for the carrying out of your contract agreement with us.

"An early reply will oblige

"Yours truly,

"MONTROSE LAND COMPANY,

"J.R.Weeks."

The Secretary reported receipt from Henshaw Brothers of $25.00 for permit to connect with sewer on Morris Avenue, Springfield, which he has turned over to the Treasurer.

Mr. Webb of Irvington called the attention of the Board to the trouble on a portion of Augusta Street caused by the overflowing of the sewer during heavy rains, and asked that the Board take measures to afford a relief from the present conditions. Referred to Engineer to report at next meeting.

May 2nd having been set for the Annual Inspection, it was decided to make an examination of this portion of the sewer at that time.

The Secretary was directed to procure the necessary carriages for Inspection day.

The following bills having been properly audited were ordered paid:

McGraw Publishing Co.	$ 29.00
Queen & Co.	6.00
Cone & Dawes	23.10
N. Y. & N. J. Telephone Co.	33.70
Alexander Potter	166.66
G. W. Hayward	80.00
F. R. Sandford	100.00
Alexander Potter	166.67
F. R. Sandford	100.00
Geo. W. Hayward	80.00

There being no further business, adjourned.

E. D. TUTTLE,
Secretary

New York, April 26, 1906.

Joint Meeting of June 28, 1906.

Roll call. Present: Chairman Francis Speir, Jr., Dr. Jos. S. Vinson, Wm. T. Baird, John J. Kenney, Albert E. Webb.

Minutes of last meeting approved.

In relation to the Montrose Land Co. matter the Secretary reported that Counsel advises that the contract provided that the street was to be replaced in as good condition as it was before the work was done. If it is shown that this was not done by the contractor by the time the work was completed, and notwithstanding this fact the work was accepted, then it is up to the Joint Meeting to make it right. On motion the subject was referred to the Engineer.

The Secretary read summons issued by the Supreme Court in the suit by Jas. P. Hall, contractor for the Fourth section. On motion referred to Counsel with instructions to defend said suit.

Mr. Webb brought up the question of the condition of the sewer in Augusta Street, Irvington, and asked that the Board make some provision to relieve the present conditions. The matter was referred to the Engineer to prepare a plan, and to Counsel as to the legal position.

As provided for by statute the Secretary was instructed to certify to the different municipalities that the estimated amount that would be required for the maintenance of the sewer from July 1, 1906, to July 1, 1907, would be $8,400, this amount to be borne equally by each municipality.

Mr. Kenney offered the following resolution:

"Resolved, That the several municipalities do raise and pay to the Treasurer of the Joint Meeting the sum of $2,100.00, which shall be assessed upon the joint municipalities in the proportion fixed by the contract between the several municipalities, providing for the care and maintenance of the Joint Sewer, i. e., each municipality paying an equal amount or one-seventh of such assessment; and further, that the Secretary be directed to notify the several municipalities of such assessment and the amount to be paid by each; and further,

"Resolved, That the said moneys be paid to the Treasurer within 20 days from the first day of August, 1906."

Resolution adopted: 4 ayes, 0 noes.

The following letters were presented by the Chairman and ordered printed in the minutes:

"The Village of South Orange, New Jersey.

"June 15, 1906.

"Mr. Francis Speir, Jr.,
"Chairman Joint Meeting.

"My Dear Sir:—In connection with questions recently asked and answered relative to our original and present capacities in the trunk sewer, I should also be greatly obliged for the following additional information:

"The original percentage and capacity of this Village in the syndicate section?

"The original percentage and capacity of West Orange in each branch of the sewer?

"As this information is needed in order to enable us to make a definite reply to South Orange Township as prompt an answer as may be possible will be appreciated.

"Yours very truly,
"Robert S. Sinclair,
"President."

"June 16, 1906.

"Robert S. Sinclair, Esq.,
"President Village of South Orange.

"Dear Sir:—As Chairman of the Joint Meeting, I am in receipt of your favor of June 15th.

"Your letter asks two questions: First, what is the original percentage and capacity of this Village in the syndicate section; second, the original percentage and capacity of West Orange in each branch of the sewer?

"By 'original capacity,' I assume you mean the capacity as definitely fixed by the contract entered into between the seven joint municipalities and authorized under the terms of the provisions of a joint trunk sewer ordinance, identical in the separate municipalities.

"By reference to this contract it appears that in the sewer for the syndicate section forming a part of the outlet or branch sewer designated A. Q. T. on the map of the joint trunk sewer, the Village of South Orange owned 4.14% and its capacity therein was 234,000 gallons.

"Owing to the increase of the size of the main joint trunk sewer authorized after the execution of the contract, the percentage of the Village was substantially increased. I am not an engineer, but I figure from the data set forth in the minutes of the Joint Body for November 3, 1904, that the present syndicate

capacity was increased 34% or 79,560 gallons per diem, making a total of 313,560. I have written Mr. Potter to point out any error in this calculation.

"As to the second question, this I answer on the same assumption:

"The capacity of West Orange in the main trunk sewer or the line designated A on said map was 16.80% or 2,504,300 gallons.

"Its capacity in the outlet or branch trunk sewer, designated A B on said map, first division of west branch, was 27.07% or 2,504,300 gallons.

"Its capacity in the outlet or branch sewer designated B I on said map, or the Millburn-Summit division, so-called, was 4.79%, or 229,100 gallons. (This is for the portion of the Town of West Orange lying beyond the first mountain.)

"Its capacity in the outlet or branch sewer designated B K, or the second division, west branch, so-called, was 50.93%, or 2,275,200 gallons.

"Its capacity in the outlet or branch sewer designated K L on said map, or the third division, west branch, so-called, is 50.93%, or 2,275,200 at the West Orange-South Orange line.

"These figures are contract figures. Owing to the increase in size of the main trunk sewer and the west branch from the junction of the Irvington-Newark sewer, additional capacity in the joint trunk sewer is obtained in accordance with the proportions of the several municipalities interested in the west branch, over and above the number of gallons mentioned in the contract. An examination of the minutes of the Joint Body for November 3, 1904, shows that the Engineer's estimate of West Orange's increased capacity in the Joint Trunk Sewer amounts to 884,700 gallons capacity per day, or an increase of 34%, making a total capacity of 3,389,000 therein.

"If you desire any further information, if you will let me know, I will try to furnish it.

"Very truly yours,

"Francis Speir, Jr."

Moved that the Auditing Committee be requested to audit the accounts of the Secretary and Treasurer. Carried.

Moved that the election of the officers be laid over to the July meeting. Carried.

The following bills having been properly audited, were read and ordered paid:

Jackson Awning Co., rope	$ 75.67
E. D. Tuttle, Sec., petty cash	140.12
Geo. W. Hayward	9.10

Jas. Tengrove	30.00
N. Y. & N. J. Telephone Co.	21.05
W. A. Reeve	1.70
F. R. Sandford	30.42
H. Keenan & Son	32.00
L. F. Loihle	9.00
Adrian Riker	250.00
Messerer Bros.	5.50
Roll & Sickley	6.25
Jos. Saal	7.50
Jos. Colyer Co.	3.50
R. A. Gardner	21.50
E. S. Allen	5.00
Wm. Rollinson	50.00
E. D. Tuttle	87.00
W. F. Baird	5.00
Francis Speir, Jr.	20.00
J. J. Kenney	15.00
Richard Hopkins	15.00
Thos. M. Debevoise	15.00
Jos. S. Vinson	5.00
Albert E. Webb	20.00

No further business, adjourned.

E. D. Tuttle,
Secretary.

Joint Meeting of July 28, 1906.

Roll called. Present: Chairman Francis Speir, Jr., Dr. Jos. S. Vinson, Wm. T. Baird, John J. Kenney, Richard Hopkins, Thos. M. Debevoise, Albert E. Webb.

Engineer's report read and placed on file:

"July 26, 1906.

"Joint Meeting,
"South Orange, N. J.

"Gentlemen:—I beg leave to present my report as Engineer of the Joint Trunk Sewer, and to make certain recommendations concerning the maintenance of the same. As my reports from time to time have dealt with conditions requiring attention at the time the report was made, it does not seem necessary to review at this time the various recommendations and suggestions made during the year.

"One of the important matters requiring attention at the present time is the relief for which certain houses on Augusta Street

in Irvington are asking, due to the inability of the Lyons Avenue syphon to carry off the water during extremely rainy periods as fast as it enters and passes down the sewer in front of the properties in question, causing the water to back up in the cellars. I have given considerable study to the question of the relief of these property owners, and first of all it is necessary to fix and determine the exact cause of the trouble, and also, in any method of relief, to provide a plan which shall at all times be sufficient to satisfactorily care for, not only the houses in question, but any other houses which may be constructed in this low-lying portion of the Town of Irvington, which extends from Union Avenue across Augusta Street and from Lyons Avenue north for one thousand feet.

"The cause of the trouble is twofold. First, the syphon is liable to get out of order in times of storm; second, sufficient precautions have not been taken to exclude the surface water from the manholes and house connections, producing a higher flow in the sewer than the allotted capacity of Irvington and Newark therein.

"The Lyons Avenue syphon was rendered necessary because the grade of the main sewer down the valley of the Elizabeth River is too high at the point of junction with the Lyons Avenue sewer to permit this sewer to enter it without either obstructing the river, which it must cross, or making a depression in the sewer under the river. The latter course was chosen and what is known as an inverted syphon was constructed. As is customary in such constructions, in order to create a greater velocity in the depressed portion of the sewer, it is subdivided into at least two branches of smaller diameter, so that the flow can be diverted through either branch.

"This reduction in the area in passing from the 15-inch sewer to one of the 10-inch would not be objectionable if the sewage alone found its way toward the syphon, but when sticks, bags, and bundles of various kinds find their way thereto, in passing from the large to one of the smaller pipes the mouth of this smaller sewer becomes clogged, causing the sewage to back up, thus requiring attention.

"The construction of the proposed new bridge across the Elizabeth River, on the extension of Lyons Avenue, will in all probability afford a ready means of abandoning the syphon, or at least the building of a supplemental sewer, which will prevent the repetition of the stoppage in the Lyons Avenue syphon. I have taken up the matter of the modification of the plan for this bridge with Mr. James Owen, the County Engineer, for the purpose of arranging for the crossing of our sewer thereunder, and as soon as the plans are perfected they will be submitted to your Commission with an estimate of the cost of carrying out the

project. It should be borne in mind that the trouble at Lyons Avenue exists only in time of excessive rain storms, and at such times we find that the flow in the sewer as stated above is in excess of the apportionment of Irvington and Newark in this section of the sewer, while the normal flow of this sewer is less than 25 per cent. of the allotment of the contributing towns in this section. These figures are as follows:

"Allotment in This Outlet.

Two-thirds of Newark (total, 2,085,300)	1,390,000
Two-fifths of Irvington (total, 3,372,600)	1,348,800
	2,738,800
Total maximum discharge in times of continued heavy rain	3,200,000
Normal sewage flow at syphon	630,000

"In the matter of the claim of Mr. John R. Weeks for himself and the Montrose Land Company, and of Keast Brothers, for damages done by Contractor Hall on the Fourth Section, it will be remembered that there was deducted from the final estimate of J. P. Hall, and with his consent, the sum of $100.00 to cover these claims for damages, which amount, in my judgment, fairly represented the damage done by the contractor to these properties. These gentlemen have each concluded to accept $50.00 and give a release for all claim against the Joint Meeting and contractor. I have consulted with Mr. Riker, who recommends the payment of $50.00 in settlement of each of these claims on the furnishing by them of a satisfactory release against the Joint Meeting and contractor.

"I enclose bill of James A. Christie for work done on weir manhole No. 60, amounting to $102.80. This bill was held up pending an investigation of the various items. The work was done under the supervision of Inspector Hayward. The original weir manhole was constructed before the adoption of the present method of registering the flow. Such bills as this are not properly chargeable to maintenance, but come more strictly under the head of original construction. I would recommend the payment of this bill.

"I also hand you herewith bill of Queen & Company for charts to be used on the Dibble Recording Gauge. The amount of the bill is $30. I recommend the payment of the same.

"Tunnel.

"I think it of sufficient interest to report upon the present condition of the tunnel, which, as is well known, was one of the most difficult and crucial parts of the whole Joint Trunk Sewer. I have recently made an examination of the tunnel from one end

of it to the other to determine the effect of the outside water pressure upon the sewer. At the completion of the sewer, but before its acceptance, after the compressed air was taken off, there were a number of leaks which the contractor was ordered to repair by plugging with pine sticks, tea lead, and by other means, so that upon its acceptance the leakage was practically stopped. It was taken for granted that some of the leaks would break out again, and it has been necessary to examine the tunnel from time to time to observe the action of the outside pressure on these plugs and how many of them were forced out. On my recent examination I found that there were fifteen distinct points where water was oozing and jetting into the sewer.

"I have ordered the inspectors to have these plugged. The amount of leakage into the sewer from these openings in the tunnel would probably occupy about one per cent. of the capacity of the sewer, and while this is not great, it is well worth the effort to cut them off. The water pressure on certain portions of the tunnel is about 40 feet and to make and keep the 8-inch wall absolutely water-tight was no easy task. In my opinion, fully fifty per cent. of the present leakage in the tunnel can be corrected within the next year.

"Lock Manhole Covers.

"On a recent inspection of the various portions of the sewer, I found large stones, gravel, portions of glass bottles and other rubbish, which could only find entrance to the sewer through the removal of the manhole covers and through unplugged connections in building of new houses. A great deal of this material found in the sewer can only come in by the removal of the manhole covers by mischievous boys, and must result in the more general placing of the lock manholes, which have proven the only practical method of stopping the tampering with the sewer. Upon the parts examined by myself, my assistant engineers, and those reported to me by the inspectors, at least twenty-four lock manhole covers can be advantageously used during the present year. I would recommend the purchase of this number and would suggest that bids be invited from at least three contractors. As suggested above, in connection with the Christie bill, I am of the opinion that such expense should not be met out of the annual tax budget of the various municipalities, but should be paid for in the same manner as was original construction. This is not strictly a maintenance charge.

"Lack of Supervision in Newark.

"I must again call attention to the uncertain and unsatisfactory method of inspection of house connections made to the Joint Sewer and local sewers tributary thereto, in Newark and Vailsburg, and the resultant abnormal increase in the flow of the

sewers due to this lack of responsible inspection. In many cases there is no attempt made to lay the 4-inch connections called for in the regulations; the excuse offered being that as 6-inch pipes are laid in other portions of Newark, the plumbers and builders do not see why there should be any discrimination made in those sections of Newark tributary to the Joint Sewer.

"Where water is encountered in the trenches in many cases no care is taken to exclude it while a satisfactory joint is being made, but on the other hand the water is allowed to find its way into the sewer through the open joints. When water is encountered in excavations for new buildings, it has become a practice to make the sewer connection the first thing and drain all the mud and water into the sewer. The effect which this produces upon the sewer can be readily imagined.

"There are many cellars in Vailsburg with living springs in them which are permanently connected up to the sewer. It is safe to say that one such connection is using up more space in the sewer than thirty house connections properly made, and in time of hard storm more than that occupied by sixty house connections. Newark's capacity in the sewer is thus being rapidly reached, and when the time arrives it will be impossible for Newark to make any further connections with the sewer. The Board of Public Works of Newark recently passed a resolution the purpose of which was to effect a stoppage of these abuses, and it is to be hoped this abuse of the sewer will be stopped.

"Determination of the Flow of the Sewer.

"It is a comparatively simple matter to measure the flow in a water main, but it is a difficult matter to accurately determine the flow in a sewer. I have been conducting a series of gaugings in the sewers at different points where the flow from the various towns could be most accurately determined, and from these gaugings have undertaken to determine the extent to which each one of the municipalities is using its capacity. During the course of these observations I have been able to determine certain facts and factors which go to indicate that the data upon which sewer flows have been determined heretofore does not truly and accurately represent the exact discharge of sewers, excepting under special and somewhat exceptional conditions. The extent to which this investigation has been carried, and the fact that the data secured by us for the most part covers only a comparatively small range of depths of flow, does not warrant the announcement of any definite or conclusive figures for the entire range of flow until much longer observations have been made. The higher range of figures can only be determined immediately after a rain storm and the opportunities for these observations are relatively infrequent.

"I present herewith a table showing the extent to which each

of the towns has been using its allotted capacity. This information is based upon deductions gathered from investigations and observations which we have been conducting as to the sewer flow during the past year. This table should be of much interest to the various municipalities and will give them a fair idea of where they stand at the present time, and the extent to which they can increase their present use of the sewer.

"Table Showing Use of Sewer by Various Municipalities.

Municipality.	Discharge per Day.	Alloted Capacity.	Ratio Discharge to Allotment.
Newark.			
Lyons Avenue	275,000	900,000	30.5%
19th Avenue	180,000	650,000	27.7%
South Orange Avenue	76,000	535,300	14.2%
Vailsburg	1,046,000	2,177,700	48.1%
Total	1,821,000	4,263,000	42.8%
Summit	820,000	4,227,300	19.4%
South Orange.			
4th Section	1,025,000	3,091,000	33.2%
Marion Avenue	148,000	329,000	45 %
Millburn	720,000	2,188,000	32.9%
Irvington	1,255,000	3,372,600	37.2%
West Orange.			
Main Line	725,000	3,205,200	22.6%
Millburn Line	———	322,800	0.0%

"Roselle Park.

"I beg to call the attention of the Joint Meeting to the unsettled condition of the Roselle Park matter. Roselle Park, by the payment of $7,500.00, purchased the right to the use of the Joint Sewer to the extent of 375,000 gallons per day capacity. This capacity has been exceeded a number of times, and they have made formal application for the right to purchase a larger amount. As the Joint Meeting can afford to spare double the amount of their capacity at present, without making any inroad on the capacity of any the towns with primary rights in the Joint Trunk Sewer, and as Roselle Park at certain seasons is using upwards of 500,000 gallons capacity, some definite conclusion should be reached upon this matter, which has remained open so long a time.

"Respectfully submitted,

"Alexander Potter."

Counsel submitted the following report on the proposed change in the sewer in Lyons Avenue, Irvington, the object being to effect a change in present conditions in Augusta Street:

"Newark, N. J., July 20, 1906.

"Francis Speir, Jr.,
"Chairman Joint Meeting.

"I am afraid you will think that I have forgotten the matter of the proposed change in the sewer in Lyons Avenue, Irvington. As a matter of fact, I have been giving the question some consideration and have been trying to persuade myself that the Joint Meeting would have power to make the change without going back to the original municipal bodies for authority.

"The difficulty is that theoretically the work of construction was finished two years ago and that practically the Joint Meeting has been maintaining the sewer in accordance with the provisions of the contract, which provides for an equal proportionate maintenance charge to each of the municipalities concerned. Naturally, it would be an unequal charge if the cost of the change were to be distributed among all the municipalities. My judgment is that it will be necessary to have a supplemental contract executed by the municipalities concerned, authorizing the change and providing for payment of the cost therefor. Such supplemental contract can be authorized by resolution. If the details of the proposed change and the distribution of the expense are sent to me by the Engineer, I will prepare the necessary supplemental contract and resolutions.

"Yours truly,

"Adrian Riker."

The Secretary presented the following detailed report of the cost of maintenance from June 1st, 1905, to July 1st, 1906:

	June 1, 1905, to July 1, 1905.	July 1, 1905, to July 1, 1906.
Salary Engineer	$ 166.64	$2,000.00
" Inspector	100.00	1,200.00
" Asst. Inspector	80.00	960.00
" Treasurer	100.00 (6 mos.)	200.00
" Secretary	150.00 (6 mos.)	300.00
Counsel	341.00 (1905)	250.00
Executive Committee	140.00 (6 mos.)	230.00
Rent	48.00 (1905)	48.00
Expense, Pay Rolls for Labor and Repairs		2,638.49
	$1,125.64	$7,826.49

The matter of the Montrose Land Company was taken up, the Engineer having reported that they had agreed to accept the sum of $50.00 and release the Joint Meeting from all claims for

the failure of Contractor Hall to replace Meadowbrook Lane in condition. Motion that the report of the Engineer be concurred in and that Counsel prepare the necessary release. Carried: 6 ayes, 0 noes.

The claim of Keast Bros. was reported by the Engineer, stating that they had agreed to accept the sum of $50.00 in full settlement of their claim for damages sustained by Contractor Hall to their property on Meadowbrook Lane. Moved that the report of the Engineer be concurred in and that Counsel prepare the necessary release. Carried: 6 ayes, 0 noes.

Bill of Jas. A. Christie, $102.80, ordered paid and referred to Counsel for opinion as to manner of distribution.

Bill of Queen & Co., $30.00, ordered paid.

Moved that the Engineer solicit bids for manhole heads that have been replaced by lock manhole heads. Carried.

Moved that the Engineer solicit bids for 24 lock manhole heads and covers. Carried.

Moved that Counsel give opinion as to the manner of apportionment of cost of same.

Moved that the Chair appoint a committee to wait upon the Roselle Park Board in reference to additional sewage capacity. Carried.

The Inspector's report read and filed.

Bill of Inspector for sundry expenses, $4.30, ordered paid.

The following officers were elected for the ensuing year:

Chairman—Francis Speir, Jr.
Treasurer—Wm. Rollinson.
Secretary—Edward D. Tuttle.
Counsel—Adrian Riker.
Engineer—Alexander Potter.

There being no further business, adjourned.

E. D. Tuttle,
Secretary.

Joint Meeting of October 16, 1906.

Meeting called to order by Chairman Francis Speir, Jr.

Roll called—Francis Speir, Jr., Chairman; Wm. T. Baird, of South Orange; J. J. Kenney, of West Orange; Richard Hopkins, of Millburn, and A. E. Webb, of Irvington, being present.

The Engineer read his report, which was, on motion, ordered incorporated in the minutes:

"South Orange, N. J., October 16, 1906.

'Joint Meeting.

"Gentlemen:

"I present herewith tabulation of bids received for the Lyons Avenue Sewer, as follows:

Harrison Construction Company, Newark, N. J.	$1,351.25
Charles Ippolito, Orange, N. J.	1,739.55
Donato Fusco, Montclair, N. J.	2,999.87

"The Harrison Construction Company being the lowest responsible bidder, I would recommend that they be awarded the contract.

"I have prepared and present herewith contract in duplicate to be executed when South Orange passes the joint resolution and the joint contract is signed between Newark, Irvington and South Orange. Mr. Riker is of the opinion that only the three interested municipalities need sign the joint contract.

"Believing that the resolution will be duly passed by South Orange and the joint contract signed by them which has already been signed by Newark and Irvington, I have asked the Harrison Construction Company to proceed with the work and push it to a speedy completion. This they are willing to do and to this end have already placed the order for their pipe.

"There has been some discussion in regard to getting the County Engineer to allow us to place the sewer over the bridge instead of under it. I did not consider this of sufficient importance to oppose the determined and logical opposition of the County Engineer to this plan. However, if consent is secured and this change is made it will not delay the work in any way.

"The bringing of two sewers together at right angles is not in the least objectionable, provided that at the junction the tributary sewer is brought into the main sewer with a long sweeping curve, as we propose to do in this instance.

"We hope to report the completion of this sewer before winter.

"A meeting was held at my office between the Roselle Park

Committee and the Special Committee of the Joint Meeting, and Mr. Hopkins will doubtless report as to what took place.

"Respectfully submitted,

"ALEXANDER POTTER."

Mr. Hopkins, Chairman of Special Committee to confer with Roselle Park in the matter of additional sewerage for that Borough, reported that the committee had met with the Sewerage Committee from Roselle Park; the subject was generally talked over, but no conclusion reached, and that he would recommend that an accurate account of the flow from Roselle Park be secured and kept and that a bill be rendered for the amount used in excess of their quota of allowance.

Report, on motion, received and committee continued.

Moved that the Borough of Roselle Park be charged for such volume of sewage as shall be in excess of their contract allowance a sum commensurate with the excess capacity. Motion carried.

Mr. Riker, Counsel for the Joint Meeting, presented the following report:

"Newark, N. J., October 5, 1906.

"E. D. Tuttle, Secretary, Irvington, N. J.:

"Dear Sir:—In the matter of the pending suit of J. P. Hall against the Joint Meeting, I submit the following:

"In the report of Alexander Potter, Chief Engineer, dated December 10, 1903, he presented claims of J. P. Hall, which constitute the chief part of the claim now in litigation. Reference to this report will show that the Engineer did not certify these claims nor recommend their payment, but did recommend that they should be submitted to Counsel.

"On May 13, 1904, Mr. Potter wrote a letter to J. P. Hall, of which I enclose a copy. It will be seen that he there stated that he had presented these bills to the Joint Meeting and O. K.'d them, so far as the work done is concerned.

"Upon the facts before me at the time of the report I was unable to advise the payment of these claims. I have, however, investigated the matter further, and upon a review of the facts I am satisfied that Mr. Hall was entitled to receive payment for the amount of his claims, for the reason that by express direction of the Engineer he did the work in a manner not required by his contract, and, therefore, the Joint Meeting is liable for the amount of the claims.

"I have agreed with the attorney for Mr. Hall that the present suit shall be discontinued upon the payment to Mr. Hall of the

amount of his claims, with 5 per cent. interest from June 1, 1904, but without costs.

"I submit herewith a letter written by the Engineer to me under date of October 4, 1906, which appears to fully justify the view taken in this opinion.

"Yours truly,

"ADRIAN RIKER."

"May 13, 1904.

"Mr. James P. Hall, Jersey City, N. J.:

"Dear Sir:—Your letter of the 11th is received and contents noted. Your explanation concerning the pipe derrick is satisfactory to me.

"Concerning your statement regarding Mr. Ippolito, I will this day write him requesting that he settle with you for the payment of the furnace, pot, ladle, etc., which he has been using. I was not aware that he was still using your material, but presume the statement made by you is absolutely correct. I will also write to Mr. Driscoll and Mr. Ippolito concerning the sulphur sand which you say they had from you. I trust that you will get a prompt settlement from these men.

"Concerning your bill against the Joint Commission, I beg to state that I have presented these bills to that body and O. K.'d them so far as the work done is concerned. Mr. Riker, however, holds that the Board has no legal obligation which binds them, consequently they have passed beyond me.

"Regretting that this should occur, I remain,

"Yours very truly,

"ALEXANDER POTTER."

"October 4, 1906.

"Mr. Adrian Riker, Attorney for Joint Sewerage Commission, 164 Market Street, Newark, N. J.:

"Dear Sir:—I am in receipt of your letter of October 3rd and beg to make a supplementary report upon the claim of J. P. Hall, contractor on the Fourth Section of the Joint Trunk Sewer.

"The claim of Mr. Hall is made up of three items. First, a charge for the delay and expense occasioned by the arbitrary refusal of the authorities of the Village of South Orange to permit the contractor to place his dirt upon the sidewalk on Meadowbrook Lane, which extra bill amounts to $495.12. This bill is made up of a claim of $160.00, which the South Orange and Maplewood Traction Company charged Mr. Hall for the discontinuance and abandonment of one of their tracks.

"The other principal item is for carrying four hundred yards of material excavated from the trench across the track and back again at 60 cents a yard. The items of this bill have always ap-

peared to me to fairly represent the value of the work done. The facts of this matter are these: The Village authorities interfered and the contractor could not go on with his work, and asked my advice in the matter. I thought that I had authority under the contract to direct Mr. Hall to alter the method of doing the work in the manner in which he did it, and approved of his method of blocking the track and carrying the material across the street, and told him that so far as I was able I would endeavor to have him reimbursed for the expense.

"In regard to the claim of $78.71 for crossing the property of W. A. Manda, you will recall that our right of way agreement with Mr. Manda compelled us to restore his ground to the condition in which we found it within a specified time. The time between the letting of the contract and the time set in Mr. Manda's agreement was not sufficient to permit Mr. Hall to complete this work in the ordinary course of carrying out his contract; in fact, he did not have time to procure any material from the factory in order to complete this work in the time required. To accommodate the Joint Meeting he ordered pipe locally in smaller quantities and from different concerns and at higher prices than would have been necessary in purchasing by carload lots direct from the factory. The extra charge made by Mr. Hall over his contract prices for this work is fair and reasonable, and I would recommend its payment.

"In regard to the third item, namely, the delay caused by the track foreman of the D. L., & W. R. R. ordering the contractor to stop all work on account of lack of permit, the facts in connection with this case are as follows: The chief engineer of the D., L. & W. Railroad agreed with me to permit us to lay the sewer along their right of way, and told me that I need not wait for the signing of the agreement. I ordered Mr. Hall to proceed with the work. The chief engineer, however, failed to notify the track foreman, and he, having no official notification from the railroad, refused to permit Mr. Hall on the ground, delaying him for a day or more pending the arrival of the official order from the chief engineer. The amount of this claim fairly represents the loss due the contractor for the delay.

"I find in my report to the Joint Meeting dated December 10, 1903, the following reference to Mr. Hall's claims:

" 'I present herewith bill of J. P. Hall Company, contractors on the Fourth Section, for expenses incurred by reason of the restrictions placed upon them on Meadowbrook Lane. The property owners refused to allow him the use of the sidewalk, and the street railway company refused to allow him to block their tracks except under certain restrictions, which the contractor claims cost him the amount stated in the claim attached hereto. The contractors were given to understand that they would have a thirty-foot right of way, but at this particular point their right of way was

less than fifteen feet. I would suggest reference to Counsel for opinion.

"'I present bill of J. P. Hall & Co. for $50.00, claimed for delay in entering upon lands of the D., L. & W. Railroad. The facts are as follows: After securing permission from the chief engineer of the D., L. & W. Railroad to proceed with the work of construction, I ordered the contractor to go to work on this property. The section boss, having no orders to permit us to proceed, forcibly stopped the contractor's men two days in succession; hence the claim. I suggest reference of this matter to Counsel for opinion.'

"I also note that the meeting of the same date the following action in reference to these claims was taken:

"'Mr. Potter, on being asked in regard to James P. Hall's claim, said that it amounted to $495.12.

"'Mr. Kenney moved that the James P. Hall claims be referred to Counsel. Motion was duly seconded, and, on vote being taken, was carried.

"'Mr. Speir moved that James P. Hall's bill for delay be referred to Counsel. Motion was duly seconded, and, on vote being taken, was carried.

"'Counsel reported on James P. Hall's claim for $50.00, which had been referred to him, that under the contract the contractor agreed to work when directed by the Engineer, and that in his opinion Mr. Hall's claim should be rejected.

"'Mr. Kenney moved that the recommendation of Counsel be concurred in. Motion was duly seconded, and, on vote being taken, was carried.'

"I have not been able to run across any reference to the claim of Mr. Hall in reference to the Manda matter.

"Yours very truly,

"ALEXANDER POTTER."

Mr. Kenney, of West Orange, offered a resolution that the claim as adjusted by Mr. Riker be paid. Resolution adopted—4 ayes, 0 noes.

Moved that a copy of Counsel's report and Engineer's letter be sent to South Orange and West Orange.

Mr. Kenney offered the following resolution:

"Resolved, That the proposal of the Harrison Construction Company, of Newark, N. J. (they being the lowest responsible bidders for the Lyons Avenue Sewer), be accepted; that the proposal be reduced to a contract in writing and a satisfactory bond in the sum of $700.00, to be approved by the Joint Meeting, shall be required from and given by them for the faithful performance of their contract."

Resolution seconded and carried.

Moved that the Chairman and Secretary be directed to enter into the execution of a contract with the Harrison Construction Company to construct the sewer in Lyons Avenue in accordance with plans and specifications on file in the office of the Joint Meeting, upon the execution of a proper bond in the sum of $700.00 for the faithful performance of the contract. Motion carried.

"West Orange, N. J., October 16, 1906.

"To the Joint Meeting in the Matter of the Outlet Sewer, etc.:

"Gentlemen—The time has come when I find it necessary for me to tender to you my resignation as Treasurer of the Joint Sewer. My reason for taking this step is, I believe, well known to all of you. Some months ago I was offered a position by a friend of mine in the mining country of Nevada, and I have spent the past six months in that country. At the time of my leaving you were kind enough to allow me to retain my position, giving me an opportunity to make certain as to whether my stay in Nevada would be permanent, allowing the matter of my resignation to lay over until this time.

"It has been my very good fortune to be associated with the Joint Sewer from its very conception. I was appointed Secretary at the first Joint Meeting, which position I held until the sewer was completed, since which time I have, thanks to your good offices, held the position of Treasurer. Throughout the whole of this period I have met with nothing but the greatest possible kindness, courtesy and consideration from each and every member of the Joint Meeting, those who were in office in the beginning, and who have been from time to time in office ever since.

"In tendering my resignation, therefore, I wish to express to you the feeling of deep regret with which the step is taken, and I wish to assure you that nothing short of the absolute impossibility of retaining the office would cause me to do so.

"It is a great pleasure for anyone to look back upon work which has been done, and done successfully. It is a matter of which one may be proud, may well be proud to have been associated in such a great and successful project as the sewer has been, to know that the work has been done honestly, faithfully and economically; that it has been in every respect beyond the possibility of criticism, and the result of it all has been of the greatest benefit to the whole community. The experience which I have had will, I am sure, stand me in good stead through life, and the pleasant associations and friendships which I have made will never be forgotten.

"Thanking you again, therefore, for all your kindness in the

past, with best wishes for the successful continuation of the Joint Meeting through the many years to come, believe me,

"Very respectfully,

"W. ROLLINSON."

The Chairman spoke feelingly in reference to Mr. Rollinson being compelled to sever his connections with the Joint Meeting, and while very much regretting his resignation, wished him the best of success in his new venture.

Mr. Kenney moved that the resignation be accepted. Motion seconded and carried.

Mr. Kenney moved that Simeon H. Rollinson, of West Orange, be appointed Treasurer to fill the unexpired term of Treasurer. Motion seconded and carried.

Mr. William Rollinson asked that his books be referred to the Auditing Committee for audit and report at next meeting. Carried.

Mr. Kenney moved that the Treasurer file his bond by the next meeting. Carried.

Adjourned.

E. D. TUTTLE,
Secretary.

Joint Meeting of January 18, 1907.

Roll called at 8 P. M., the following members present: Chairman, Francis Speir, Jr.; Augustus F. Eggers, Newark; Albert E. Webb, Irvington; Wm. T. Baird, South Orange; John J. Kenney, West Orange; Thos. M. Debevoise, Summit.

Minutes of last meeting, as printed, were approved.

The Engineer's report was read as follows:

"New York, N. Y., January 18, 1907.

"Joint Meeting, South Orange, N. J.:

"Gentlemen:—I beg to report the completion of the Lyons Avenue sewer by the Harrison Construction Co., to whom was awarded the contract, and present herewith the final estimate of these contractors and recommend its payment, less the percentage to be held for six months, in accordance with the terms of the contract. The construction of this sewer will reduce the care required to the Lyons Avenue syphon, but does not afford entire relief to the

condition of Augusta Street as was anticipated by some persons, although the impossibility of complete relief from this source had been pointed out by me. Complete relief to the few houses on Augusta Street where the trunk sewer is near the surface can only be secured by the construction of an independent sewer on Augusta Street, connecting with the joint sewer at the intersection of Augusta Street with Lyons Avenue.

"Since the last meeting I have made several examinations of the sewer in person and have had my assistant engineers also examine the sewer at crucial points from time to time, and have pointed out and had remedied certain matters and certain minor defects. Upon a recent examination I found that it will be necessary to extend the lock manhole covers to the district lying back of the John Erhardt property, for recently several of the manhole covers have been found to have been removed and rolled down into the river. I have also requested Inspector Sandford to remove the 12-inch sewer from the joint sewer at Grand Avenue, which was built through our sewer, the removal of which has not been necessary before the present time. I have been making observations as to the amount of water passing through this 12-inch line, and find that it will not tax the trunk sewer in any appreciable way, as there is no storm water led into it.

"I have had conferences with the city engineers and officials at a number of towns, and have striven to urge them to the necessity of closing up the perforations in the manhole covers, as I am satisfied that the sudden rise of the water in the sewers after a rainstorm is caused almost entirely by the admission of water through the perforations in those manhole covers. The engineer of the City of Newark has promised his co-operation in this matter, and has done something looking to the amelioration of this difficulty at least in part. The Irvington authorities are also lending their assistance to this end.

"I present herewith the bills for the lock manhole covers purchased from the Sessions Foundry Co., and also from J. P. Kiernan for painting the iron pipes at the crossings of the Elizabeth and Rahway Rivers, and would recommend their payment.

"I have kept records of the flow of the Roselle Park sewer, and find that they are exceeding their capacity by approximately 25 per cent., and would recommend that they be notified either to stop this excess flow or that some amount be fixed per hundred thousand gallons or other unit of measure for which they shall be charged for this excess use.

"I beg to report the complaints of Inspector Sandford about the interference with his work because of the continued indisposition of Assistant Inspector Hayward and his inability to get on the work before nine or ten in the morning. These reports have come to me from Inspector Sandford for some time, and should be brought to the attention of the Board for their action.

"I beg to report also that the Town of Millburn has recently agreed with the Township of South Orange to dispose of some of its capacity in the Joint Trunk Sewer, and that the design of the South Orange Township system will be so arranged as to take this capacity from Millburn at certain fixed and definite points.

"Respectfully submitted,

"ALEXANDER POTTER."

Inspector's report read and placed on file.

The Treasurer, S. H. Rollinson, presented his bond, which was on motion accepted and filed, same to be first approved by Counsel.

The Treasurer reported the receipt from the American Surety Co. of $11.00, being the return premium for the unexpired time on bond of Wm. Rollinson, the late Treasurer.

The Treasurer's oath of office was received and placed on file.

Motion was made by Mr. Kenney and seconded that the purchase price to Roselle Park for an excess capacity of 375,000 gallons per day be $10,000, or, in lieu of purchase, an annual rental charge of $750. Mr. Wm. T. Baird, speaking to the motion, opposed a sale of such capacity at this time and offered as an amendment to the motion the rental clause of the original motion. That an annual rental charge for an excess capacity of 375,000 gallons per day to Roselle Park be $750.00. The amendment was adopted, as was also the original motion as amended.

Mr. Baird moved that the Engineer be instructed to purchase a weir and to have same placed in the Roselle Park connection with the sewer. Motion carried. Ayes, 5; noes, 0.

Mr. Baird moved that the Engineer be instructed to notify Roselle Park that from the 18th of January, 1907, an annual rental charge of $750 would be made for all excess capacity up to 375,000 gallons per day over and above the capacity now owned by them. Carried.

The Engineer suggested that it would be advisable to have an extra weir on hand to use in place of any of the present weirs being out of order, and on motion of Mr. Baird he was instructed to procure one. Ayes, 5; noes, 0.

Mr. Debevoise offered the following resolution:

"Resolved, That the office of assistant inspector be abolished and that the services of Assistant Inspector Haywood be dispensed

with from and after February 1, and resolved, that a laborer be employed at $2.00 per day or not to exceed $50.00 per month."

Resolution adopted. Ayes, 4; noes, 1. Mr. Webb voting in the negative.

Mr. Webb again called the attention of the Board to the sewer in Augusta Street, Irvington.

The Engineer presented final estimate of work done by the Harrison Construction Company, showing the total cost of the Lyons Avenue sewer to be $1,791.40, and certified same to be correct and recommended acceptance of the work.

Mr. Baird offered the following resolution:

"Whereas, The Engineer having reported that the work of constructing the Lyons Avenue section of the Joint Sewer by the Harrison Construction Co. has been completed and has recommended the acceptance of the work;

"Resolved, That the same be and is hereby accepted, and payment thereof in accordance with the contract for the amount $1,791.40 due thereon as reported by the Engineer is hereby authorized, less 5 per cent., which shall be retained for 6 months, provided, however, that the contractors shall have certified before such payment is made that all bills for material and labor for the work of construction have been paid."

Carried. Ayes, 5; noes, 0.

Mr. Webb offered the following resolution:

"Resolved, That the several municipalities represented in the 5th Section of the Joint Sewer, do raise and pay to the Treasurer of the Joint Meeting the sum of $1,791.40 to provide for the payment to the contractors for the building of the Lyons Avenue extension, which amount shall be assessed upon the several municipalities in the proportion fixed by the contract between the several municipalities.

"Resolved, That the Secretary be directed to notify the several municipalities of said assessment and the proportion to be paid by each, and, further, that the said moneys be paid to the Treasurer of the Joint Meeting within twenty days from the 18th day of January, 1907."

Resolution adopted. Ayes, 5; noes, 0.

Mr. Webb offered the following resolution:

"Resolved, That the several municipalities do raise and pay to the Treasurer of the Joint Meeting the sum of $4,200, which shall

be assessed upon the joint municipalities in the proportion fixed by the contract between the several municipalities, providing for the care and maintenance of the joint sewer, i. e., each municipality paying an equal amount, or one-seventh of such assessment; and, further, that the Secretary be directed to notify the several municipalities of such assessment and the amount to be paid by each; and further,

"Resolved, That the said moneys be paid to the Treasurer within twenty days from the 18th day of January, 1907."

Resolution adopted. Ayes, 5; noes, 0.

The following bills were read and ordered paid:

E. D. Tuttle, petty cash account	$224.95
Jos. S. Vinson	10.00
Francis Speir, Jr.	15.00
A. E. Webb	25.00
Richard Hopkins	15.00
John J. Kenney	20.00
Wm. T. Baird	20.00
Thos. M. Debevoise	5.00
E. D. Tuttle, 3 months' salary and office rent	99.00
S. H. Rollinson, Treasurer	50.00
E. D. Tuttle, for freight paid	23.70
Cone & Dawes	10.40
Newark Evening News	2.90
Sessions Foundry Company	237.30
F. R. Sandford	13.33
Jos. Saal	3.25
W. A. Reeve	2.15
R. A. Gardner	36.00
P. J. Kernan	28.00
S. Messerer	9.00
Ludwig Batt	39.60
S. H. Rollinson	20.00
N. Y. and N. J. Tel. Company	35.20

Adjourned.

E. D. Tuttle,
Secretary.

Joint Meeting of April 25, 1907.

Meeting called to order 8 P. M., the following representatives being present: Francis Speir, Jr., Chairman; A. F. Eggers, Newark; W. T. Baird, South Orange; J. J. Kenney, West Orange; Richard Hopkins, Millburn; Thos. M. Debevoise, Summit; A. E. Webb, Irvington.

Reading minutes of last meeting laid over.

Report of Engineer read and ordered to be placed in the minutes:

"April 24th, 1907.

"Joint Sewer Commission:

"Gentlemen—I beg to report upon the Joint Trunk Sewer as follows:

"*Roselle Park.*—We have kept records of the flow of sewage from the Roselle Park branch since January. Under instructions from the Joint Meeting we ordered two additional weirs, but these have not as yet been received from the manufacturer's, so that the record of flow from Roselle Park has been taken from a single reading once a week, with a proper adjustment made, based upon the continuous reading taken in the Joint Trunk Sewer near the point of the discharge of the Roselle Park sewer, so that this reading fairly represents the true reading of the sewer.

"I find from these readings that the average daily flow in the Roselle Park sewer is 1,005,000 gallons. Roselle Park has an allowance of 375,000 gallons in the Joint Trunk Sewer, which would indicate that they are exceeding their capacity by 630,000 gallons. This, however, is not quite true, because the Township of Union has the privilege of using the Joint Trunk Sewer, and numbers of the residents of the Township of Union are at present availing themselves of this privilege through the Roselle Park sewer.

"The agreement with the Township of Union was to the effect that when the amount of use exceeds 150,000 gallons, but did not exceed 200,000 gallons, they should pay to the Joint Meeting $900. When their use exceeded 200,000, but did not exceed 300,000, a further payment of $900 should be made, but when the use exceeds 300,000 gallons, up to 375,000 gallons, a final payment of $700 shall be made.

"Until the Township of Union makes a direct connection with the Joint Trunk Sewer, the redress of the Joint Meeting is by insisting upon the payment by Roselle Park of the excess flow in the sewer. Roselle Park will then be compelled either to pay this excess amount, including the flow from the Township of

Union, or demonstrate that much of the excess is not due to its own use, but to the use of the Township through their system and compel the Township to pay accordingly.

"A bill, therefore, should be submitted to Roselle Park forthwith, and, in my opinion, notice should be sent to the Township of Union to the effect that it is the belief of the Joint Meeting that a portion of the amount due under their contract is now payable to the Joint Meeting.

"*Fifth Section.*—During the thaw in March many of the sewers throughout the Fifth Section were running full, and several examinations were made of the sewers thus surcharged for the purpose of determining the source of this excessive flow into the system.

"Our observations led us to the conclusion that the sewers are being surcharged by water which can be excluded from the system.

"Taking up some specific cases of water entering the sewer, we found that the greatest amount of surface water contributed to the Fifth Section is from the Irvington sewer on Washington Avenue, where there are at present four manhole heads taking considerable streams. The conditions found here during the thaw period in March are not nearly so serious as at other times, and there is a certainty that in badly flooded conditions many manholes in this section will be under one to two feet head, with a ponded area of several acres. While the placing of tight covers on these manholes will unquestionably improve conditions, the entire section should be properly graded, and with storm sewers constructed discharging into the nearest waterways, the situation would be effectively and permanently relieved and the value of the property in this section greatly enhanced.

"The manhole in Newark at Nineteenth Avenue and Twentieth Street is in a low pocket and takes considerable water during the flooded season. There is also a six-inch connection with the pond near Nineteenth Street in the City of Newark which is running two inches of water. This connection was made at the request of the Mayor of Newark, who desired to facilitate the filling up of the pond. I have recently notified the Engineer of sewers in Newark to have this pond permanently cut off by sealing the outlet.

"I am confident that with the Augusta Street sewer relieved of storm water from Washington Avenue, there would be no cause for flooded cellars. One investigation which has been made, which clearly indicates that the water comes from the surface and not through the soil, was that two mornings in succession the sewer on Augusta Street was found to be running less than half full, but in the meantime, the sun having melted the snow, the flow in the afternoon was so great as to surcharge the sewer. An increase from a sewer less than half full to a sur-

charged sewer, and its return again to the normal level the next morning, is conclusive evidence that the surplus came in through the manholes and not through the sewer.

"Reduction of Engineer's Salary the Coming Year.—I desire to call the attention of the Joint Meeting to a matter which is of personal interest to myself and perhaps to the Joint Meeting. During the first two years of the life of the Joint Trunk Sewer, after its completion, the duties connected with the engineering department were very arduous at times, and I was called upon in connection with the many issues directly and indirectly affected to spend such an amount of time that the compensation paid me for services as Engineer-in-Chief was, as a matter of fact, inadequate to reimburse me for the time spent upon these matters. Especially was this the case during the first year, when there were so many conflicting interests and equities to be determined and established, examinations to be made of sewers before the contractors could be relieved under their contracts, special connections to be considered, weirs to be regulated, inspectors to be instructed, as well as supervised, adjustments to be reported upon to Counsel, etc., etc. The work for the past year, while still involving much engineering judgment and responsibility, and with questions constantly arising which an engineer is best fitted to solve, as well as computations to be made, reports rendered, etc., has become somewhat systematized, and hence requires less of my time. However, the numerous interests involved and questions constantly arising with the City of Elizabeth, the undetermined question of the settlement with Roselle Park, which I refer to in another part of this report, the question of compelling Union Township to pay for its sewerage rights, and other questions constantly, and often unexpectedly, arising as to the best policy to be determined in handling certain features, such as the South Orange Avenue sewer, referred to in another part of this report, are all questions which require the knowledge and experience of an engineer. I do not, however, having the interests of the Joint Trunk Sewer keenly at heart, feel that after the end of the present fiscal year the joint sewer should bear as heavy a charge for engineering services as heretofore, although needing just as experienced counsel and direction, and I therefore propose a reduction in my salary for this service of one-half, said reduction to take effect at the end of the present fiscal year.

"Records.—I present herewith a statement showing the flows from the different towns during the last four months, which months have been the most severe months of the year, with the highest flow we have had. These are as follows:

	Present Average Daily Discharge.	Maximum Allotted Daily Discharge.
Newark	1,008,000 gal.	2,085,300 gal.
Vailsburg	1,588,500 gal.	2,177,700 gal.
Summit	738,000 gal.	4,227,300 gal.
South Orange	967,500 gal.	3,420,900 gal.
Millburn	624,000 gal.	2,188,200 gal.
Irvington	1,636,000 gal.	3,372,600 gal.
West Orange	1,242,000 gal.	3,528,000 gal.

"*South Orange Avenue.*—There has been some question as to the adequacy of the sewer on South Orange Avenue, from Sanford Street to Lilly Street, to provide proper facilities for the houses on either side of the street. The character of the buildings on this particular section of the Avenue has entirely changed since the Joint Trunk Sewer was planned and constructed. Also, since the sewer was built, the East Orange Water Works has constructed its large water main along the north side of the Avenue, precluding the use of much of the sewer, because it lies directly between the houses on that side of the street and our sewer. On account of the character of the buildings now being constructed upon this part of the Avenue, the sanitary sewer at this point should unquestionably be deepened to provide for the changed conditions which have arisen, business blocks with deep cellars being now the character of the buildings being put here, instead of residences heretofore occupying this part of the Avenue almost exclusively, making it at the time our sewer was planned a dwelling house section. Such a condition was not, therefore, contemplated at the time the joint sewer was first designed, this being one of those unforeseen changes and conditions of settlement in a growing neighborhood where new settlement has been very rapid—almost a building boom setting in suddenly. But it must also be remembered that one of the prime causes for this new growth was the fact that this section had become tributary to a great outlet sewer. The land throughout this section has in consequence been very greatly enhanced in value, and the cost of any such improvement as the deepening of this sewer to accommodate these new local conditions can well afford to be borne by this section which has so greatly increased in value because of it.

"It is possible for local sewers to be constructed or the joint sewer be deepened at this point and connection made with the outlet sewer at Lilly Street, where the Joint Trunk Sewer is fifteen (15) feet deep—a depth more than ample to provide proper fall of sewers and drains from deep cellars.

"Special cases such as this will undoubtedly arise from time to time, due to the rapid growth and changing character of the localities in which they occur. The only way to have provided for such conditions would have been to have built the Joint Trunk

Sewer from five to ten feet deeper over practically its entire length, but this would have increased the cost of the Joint Trunk Sewer originally to such an extent as to have made it practically prohibitive for the communities, then so sparsely settled as were most of them, to have built the sewer at all, and yet without the sewer the present growth in settlement would never have taken place. So that the men who conceived and adopted this Joint Trunk Sewer were wise in not endeavoring to take care of such a remote future contingency that in so doing they would have utterly defeated the great good which has come from the joint sewer to these various interested municipalities, and which is becoming more and more evident each year.

"The law on the subject of sewer improvements is that the Joint Trunk Sewer has been built for the benefit of all the municipalities interested in its construction, and not as a local sewer to serve local purposes primarily. If it can be made use of by abutting property owners, this use may be permitted, but if not, there is no obligation encumbent upon the Joint Trunk Sewer to afford service locally along its line.

"Newark and Vailsburg.—Mr. Riker, Counsel for the Joint Meeting, notified me recently that the contract between the municipalities for the maintenance of the sewer will expire at the end of this fiscal year. The existing arrangement will have to be renewed or some other basis of maintenance adopted. The present contract provides that the expenses of maintenance shall be borne by all of the seven municipalities in equal proportion.

"Since the present contract was made Newark has absorbed the Vailsburg section and consequently has acquired its obligations, and is now required to pay two-sevenths of the maintenance. But even with the addition of Vailsburg's capacity, Newark has no greater capacity in the sewer than some of the other municipalities.

"At the present time five of the municipalities pay $14.30 each for each one hundred dollars cost of maintenance, while Newark pays $28.60. If the total cost of maintenance is divided into six parts then each of the municipalities will pay $16.66, or, in other words, Newark and Vailsburg together will save $12.00 on each one hundred dollars of expense, and the remaining five municipalities will pay $2.35 more on each one hundred dollars spent.

"On the basis that each town pays for maintenance in proportion to their holdings in the sewer, they would each pay as follows:

Summit	$20.13 on each $100 spent
South Orange	16.26 on each $100 spent
Millburn	10.44 on each $100 spent
Irvington	16.06 on each $100 spent
West Orange	16.80 on each $100 spent
Newark	20.30 on each $100 spent

"On the basis of each municipality contributing towards the cost of the sewer in proportion to the flow, the municipalities would pay at the present time the following proportions:

Newark	$12.92	
Vailsburg	20.36	
		$ 33.28
Summit		9.45
South Orange		12.39
Millburn		7.99
Irvington		20.97
West Orange		15.92
		$100.00

"I would suggest that a committee be appointed to report upon this matter.

"From the report of the Chief Inspector you will note that since the change in the assistants, he has been able to accomplish more work at a less cost. The Inspector, however, has been somewhat handicapped for lack of a horse. and his work has been somewhat retarded on account of his inability to procure a horse and wagon except at $5.00 a day when needed. A horse could be rented regularly at a cost of about $30.00 per month if the Joint Meeting did not desire to purchase a horse and wagon suitable for the work, both being much needed, and in the end would probably be a saving in cost, and would certainly enable the Inspector to do more efficient work. With a saving in inspectors and the reduction in the salary of the Chief Engineer, the operating expenses for the coming year will be reduced in the neighborhood of $1,500 less than this year.

"Respectfully submitted,

"ALEXANDER POTTER."

The following communication was received from the Vailsburg Improvement Association:

"April 15, 1907.

"Mr. Edwin D. Tuttle:

"Dear Sir—By the action of this Association, I am directed to call, through you, the attention of the Joint Sewer Commission to the problem confronting the owners of property fronting on

South Orange Avenue, between Halsted Street and Sanford Avenue. This section is developing as a business locality, and the cellars are necessarily deep.

"Builders are unable to connect with the Joint Outlet Sewer without going either under or over a surface water drain on the south side of the Avenue, or the East Orange water main on the north side.

"To go under these pipes has been pronounced impossible, and to go over them would bring the house drain pipes so near the surface of the street as to render freezing probable, if not certain.

"The chairman of our Committee on Streets, to whom has been entrusted the solution of the problem, wishes to appear before your Commission to discuss the way out of this difficulty, with which it is believed that your Engineer, Mr. Potter, has been made acquainted.

"Will you kindly notify Mr. Joseph Wehrle, No. 1031 South Orange Avenue, Newark, N. J., of the time and place of your next meeting, that he may be heard in this matter?

"There is, I believe, need of all possible expedition in this matter, as there is a building now in course of construction which has bumped up against this problem and is awaiting its solution.

"Respectfully,
"Charles P. Ingalls,
"Secretary."

Mr. Jos. Wehrle, the chairman of the street committee of the Improvement Association, was present and made a statement stating the conditions as they existed and showing how difficult it was to get at the sewer between the points named by his Association, and asked if something could not be done to give the abutting property owners relief. After the matter had been gone over with the Engineer, Mr. Eggers, the representative from Newark, suggested to Mr. Wehrle that this Association take the matter up with the Newark Board of Works.

Mr. Cox, of Millburn, former member of the Board, being present, was accorded the privilege of the floor.

Mr. Hopkins, of Millburn, stated that the Township of Millburn was about to sell to the Township of South Orange a portion of their capacity in the joint sewer, and would have a copy of the contract, together with a resolution prepared by Mr. Riker, Counsel of the Joint Meeting, to present at the next meeting to formally ratify the transfer, and presented the following communications, which he read and placed in the minutes:

"Newark, N. J., March 28, 1907.

"Egbert J. Tamblyn, Esq., Prudential Building, Newark, N. J.:

"Dear Sir—I have yours of March 27th with enclosure, which I return with one suggestion in pencil.

"I do not see anything else to suggest, but have drafted a brief form of resolution for the Joint Meeting, which should be presented as soon as a meeting is convened. I presume there will have to be a special meeting called for this purpose, and it would be well to take the matter up through Mr. Potter, or Mr. Francis Speir, Jr., Chairman of the Joint Meeting, or Mr. Tuttle, the Secretary. Yours truly,

"Adrian Riker."

"April 4, 1907.

"My Dear Mr. Kemp—I have your two favors of April 3rd and 4th, with contents as stated.

"In reply to your favor of April 3rd I would suggest that Mr. Hopkins, the member of the executive committee from Millburn in the Joint Body, or, in his absence, Dr. Campbell, should read the letter of Mr. Riker and offer the resolution. I am Chairman of the Joint Meeting, but have no vote.

"I have read over the letter of Guild, Lum & Tamblyn enclosing copy of Mr. Riker's letter of March 28th, the resolution which Mr. Riker has drawn to be passed by the Joint Body, and also the letter of Mr. Potter to you dated April 1st enclosing draft of proposed contract between the Township of Millburn and the Township of South Orange. This contract I have carefully read over and approve as to form, and in my opinion it amply protects the Township of South Orange in its purchase from the Township of Millburn of 25 per cent. of Millburn's capacity in the Joint Trunk Sewer, the Township of South Orange to pay therefor the sum of $35,000 and also 25 per cent. of Millburn's annual cost of maintenance and 25 per cent. of Millburn's share of any possible cost of restoration or reparation of the Joint Trunk Sewer during its life. If I had undertaken to draw such a contract I would have drawn one practically as this has been drawn.

"You ask me for my personal opinion on these papers, which I have given as above.

"I return herewith the papers mentioned, of which kindly acknowledge receipt, and oblige, very truly yours,

"Francis Speir.

"William H. Kemp, Esq.,
"Chairman Township Committee of South Orange, Maplewood, N. J."

Mr. Hitch, of South Orange, stated that there was to be a

recreation park established in South Orange, and as the Joint sewer line was through the property to be used, asked if some arrangement could not be made with the Joint Meeting which would enable the committee having charge of the arrangements to establish a toilet to connect directly with the sewer.

The matter was referred to the Engineer, who said he would be pleased to give his services to the committee and arrange the necessary plan for such toilet.

Mr. Baird moved that the Secretary be directed to send a bill to Roselle Park for such excess capacity as that Borough has used in the joint sewer, the charge for same to be pro rated on a basis of $750 per year for an average daily consumption of 375,000 gallons, and that Mr. Riker prepare a communication to Roselle Park to accompany said bill. Motion carried.

Moved that the question of new organization, to be in effect at the end of the present fiscal year, which completes a period of three years, be referred to a committee of three. Motion carried, and Messrs. Debevoise, Eggers and Baird were appointed as such committee.

Mr. Webb moved that a committee be appointed to look into the advisability of owning a horse and wagon. Carried, the committee being Webb, Kenney and Hopkins.

Inspector's report read and placed on file.

Moved that the work recommended to be done by the inspector be done. Carried.

Moved that the balance of $100.00 due to Earle & Dougherty, contractors of Section 5, be paid, if same is approved by Counsel. Carried.

Mr. Webb offered the following resolution:

"Resolved, That the several municipalities do raise and pay to the Treasurer of the Joint Meeting the sum of $4,200, which shall be assessed upon the joint municipalities in the proportion fixed by the contract between the several municipalities, providing for the care and maintenance of the joint sewer, i. e., each municipality paying an equal amount, or one-seventh of such assessment; and, further, that the Secretary be directed to notify the several municipalities of such assessment and the amount to be paid by each; and further

"Resolved, That the said moneys be paid to the Treasurer within twenty days from the 25th day of April, 1907."

Resolution adopted. Ayes, 6; noes. 0.

The following bills were read and ordered paid:

Corey W. Sandford	$14.05
F. R. Sandford	12.48
N. Y. & N. J. Tel. Co.	15.20
Cone & Dawes	5.20
John Barrett	32.90
Queen & Co.	7.78
Grover Bros.	12.35

Adjourned to meet May 23d.

E. D. Tuttle.
Secretary.

Joint Meeting of May 23, 1907.

Roll called at 8 o'clock P. M., the following members being present: Chairman, Francis Speir, Jr.; Augustus F. Eggers, Newark; Albert E. Webb, Irvington; William T. Baird, South Orange; John J. Kenney, West Orange; Richard Hopkins, Millburn; Thomas M. Debevoise, Summit.

The Chairman announced the absence of the Engineer, who was, however, represented at the meeting by his assistant.

Treasurer's report read and placed on file, and a resolution carried authorizing the Treasurer to transfer the balance in the bank in the name of William Rollinson, Treasurer, to his account as Treasurer.

Committee on horse and wagon made a progress report.

Committee on reorganization made the following report, which was on motion accepted:

"May 23, 1907.

"To the Joint Meeting,
"South Orange, N. J.:

"Gentlemen:—

"Your committee, appointed at your last meeting for the purpose of considering the basis on which the various municipalities interested in the Joint Trunk Sewer should contribute for the maintenance, repair, etc., of such sewer, beg to report as follows:

"In our opinion the expense of rebuilding, reconstruction, new construction (including the construction of storage tanks) and

similar work, should be borne by the municipalities interested, in the portions of the sewer where such work becomes necessary, in the proportions in which they contributed to the cost of the original construction.

"As to the maintenance and repair expenses, we believe that the following would be a fair division:

Newark (including Vailsburg)	12-49
Irvington	9-49
Summit	8-49
South Orange	7-49
West Orange	7-49
Millburn	6-49

"If the Joint Meeting spends $7,000 during the coming year, it will be divided under the above plan as follows:

Newark	$1,714.28 4-7
Irvington	1,285.71 3-7
Summit	1,142.85 5-7
South Orange	1,000
West Orange	1,000
Millburn	857.14 2-7
	$7,000.00

"We recommend that the interested municipalities enter into a ten-year contract embodying both of the above suggestions.

"Thomas M. Debevoise,
"Wm. T. Baird,
"A. F. Eggers,
"Committee."

Moved, that the contract as per the recommendation of the Committee be prepared by Counsel and submitted at the next meeting. Motion adopted.

Moved, that when we adjourn, we adjourn to meet Thursday evening, June 27th. Motion adopted.

The following bills were read and ordered paid, 6 ayes, noes, 0.

Thos. A. Sandford	$ 7.80
R. A. Gardner	25.00
H. B. Halsey Co.	4.90
Jos. Saal	7.50

Adjourned.

E. D. Tuttle,
Secretary.

Joint Meeting of June 27, 1907.

Meeting called to order by the Chairman, Francis Speir, Jr.

Roll called, and the following members present: Francis Speir, Jr., Augustus F. Eggers, Wm. T. Baird, John J. Kenney, Richard Hopkins, Thos. M. Debevoise and Albert E. Webb.

The minutes of last meeting read and approved. The Engineer made the following report, which was on motion received and placed on file:

"June 26, 1907.

"Joint Meeting,
"South Orange, N. J.:

"Gentlemen:—

"I beg to call your attention to the following matters:

"I present with my approval two bills from Queen & Company; one for two recording gauges which were ordered by your Commission, and the other for sundry material and supplies furnished in connection with the gauges and also a rain gauge. The latter bill amounting to $7.78, I was of the opinion had been already presented to your Commission, but a statement just received from Queen & Company indicates that the bill has not been paid.

"The gauges were somewhat delayed but immediately upon receipt, instructions were given to Inspector Sandford to have them set in place. This is now done and from this on we can have an exact record from day to day of the amount of flow from Roselle Park, which heretofore was determined from single readings once a week.

"In this connection I desire to call your attention to the correspondence between the engineer of the Township of Union and myself, concerning the connection of certain sewers in Union Township with the Joint Sewer. I have requested Mr. Bauer, their engineer, to have the Township make formal application to your Commission for permission to connect these sewers and to present a plan of the sewers so required to me for my approval on behalf of the Joint Meeting.

"Since the last meeting I have made an examination of many parts of the sewer, including an examination from the inside of the tunnel section of the sewer. I find that the leakage on the Third Section has been very much reduced over last year and it seems as if this leakage, which was rather more than desirable after the ground had become watersoaked at the completion of the tunnel, is now reduced to such an extent as to be inconsiderable in its effect upon the various towns.

"The Township of South Orange requests the passage of a resolution on behalf of the Joint Meeting approving of the contract entered into between the Township of Millburn and the Township of South Orange relative to the transferring of rights in the Joint Sewer. The Township of South Orange further requests the passage of a resolution approving of the consent on the part of South Orange Village to permit the Township of South Orange to use and make connection with the Joint Sewer under the contract agreement entered into between the Township of South Orange and the Village of South Orange, whereby for the consideration of right of way granted to the Village of South Orange, the Township would be allowed to connect a fixed number of houses with sewers leading into the Joint Sewer, in consideration with the terms therein set forth. This resolution should also provide that such permit is granted on behalf of the Joint Sewer provided that these sewers are built in accordance with the rules and regulations of the Joint Meeting approved three years ago, and any subsequent resolutions of the Joint Meeting which have been passed governing such connections. The connections required by South Orange Township will be made at Baker Street, Oakland Road and Parker Avenue.

"Respectfully submitted,

"ALEXANDER POTTER."

Mr. Hopkins submitted the following contract made and entered into between the Township of Millburn and the Township of South Orange:

"AGREEMENT made this First day of May, Nineteen hundred and seven, between the Township of Millburn, in the County of Essex, a municipal corporation of the State of New Jersey, party of the first part; and The Township of South Orange in the County of Essex, a municipal corporation of the State of New Jersey, party of the second part:

"WITNESSETH: Whereas the party of the first part with other municipalities entered into a joint contract in writing, dated March fifteenth, Nineteen hundred and one, under authority of an Act of the Legislature of the State of New Jersey entitled 'An Act to authorize two or more municipalities in this State to jointly construct and maintain outlet or trunk sewers,' approved March fifteenth, Eighteen hundred and ninety-nine, which joint contract has been recorded and filed in the Office of the Clerk of the County of Essex, and the outlet sewer and branches described in said contract have been completed and put into operation, and

"Whereas, The said party of the first part has constructed and put into operation a system of local sewers connecting with and discharging into said outlet sewer and its branches, and

"Whereas the said party of the first part is entitled to and

owns absolutely a capacity of discharge into said outlet sewer and its branches as defined and determined by the contract hereinbefore referred to; of the capacity of the Main Trunk Sewer the said party of the first part is entitled and owns ten and forty-two one-hundredths per cent (10.42), or approximately two million one hundred and eighty-eight thousand two hundred gallons 2,188,-200); and

"Whereas, the party of the second part has made application to the party of the first part to purchase from the party of the first part the right to twenty-five per centum of the total capacity of discharge belonging to the party of the first part through and along said Main Trunk and Outlet Sewer and its branches, and the party of the first part has consented to sell and transfer to the party of the second part said per centum of its capacity therein.

"Now, Therefore, In consideration of the premises and the covenants and agreements herein contained by each party to be performed, it is agreed between the parties as follows:

"(1) The party of the first part has granted, conveyed, assigned, transferred and set over, and by these presents does grant, convey, assign, transfer and set over unto the said party of the second part, its successors and assigns, twenty-five per centum of the total capacity of discharge belonging to the party of the first part in and through the trunk and outlet sewer and branches as defined and determined by the joint contract hereinbefore referred to; subject, however, to the terms and provisions of the contract above referred to, and subject also to the rules and regulations duly adopted for the management and control of said Joint Outlet or Trunk Sewer, and its branches.

"(2) That the party of the second part upon the execution and delivery of this agreement by the party of the first part, with the ratification and approval thereof by the 'Joint Meeting' mentioned in the said Act of the Legislature, will pay to the party of the first part the sum of Thirty-five thousand dollars in cash.

"That the party of the second part will also pay to the party of the first part within thirty days after receiving a statement thereof, twenty-five per centum of the annual cost of maintenance and operation of said Joint Outlet or Trunk Sewer and its branches, as apportioned and charged to the said party of the first part by the said Joint Meeting.

"That the party of the second part will comply with all the covenants and agreements of the party of the first part in said joint contract hereinbefore referred to, so far as they may be applicable to the said party of the second part, and will observe and obey all the rules and regulations adopted for the maintenance and operation of said Joint Outlet or Trunk Sewer and its branches.

"That the party of the second part will also pay twenty-five

per cent. of the cost of any restorations or reparations required in said Joint Outlet or Trunk Sewer or its branches at any time hereafter during the life of said Main Trunk Sewer or Outlet Sewer or its branches as apportioned and charged to the party of the first part by the said Joint Meeting.

"In Witness Whereof, the parties hereto have hereunto caused their corporate seals to be affixed, and these presents to be signed by the Chairmen of their respective Township Committees, and their Township Clerks, the day and year first above written.

"Signed, sealed and delivered in the presence of

"(Seal.) George C. Kessler, "Township Clerk. Richard Hopkins, Chairman

"(Seal.) Edward R. Arcularius, "Township Clerk. H. Stacy Smith, Chairman."

Mr. Hopkins offered the following resolution and moved its adoption. Adopted.

"Whereas, The Township of Millburn, in the County of Essex, is about to convey or has conveyed to the Township of South Orange, in the County of Essex, twenty-five per cent. of the capacity belonging to the Township of Millburn, in the Joint Sewer and its branches, and

"Whereas, It is thought desirable that the conveyance by Millburn to South Orange of said capacity should be ratified and approved by the Joint Meeting of the municipalities contracting to build said sewer,

"Be it Resolved, That the said contract, as presented between the Township of Millburn and the Township of South Orange, be and the same is hereby ratified and approved."

Mr. Baird of South Orange Village offered the following resolution, and moved its adoption. Carried.

"Whereas, The Village of South Orange, in the County of Essex, having by contract with the Township of South Orange agreed for a fixed annual charge to give the said Township of South Orange the right to make a certain number of taps into the joint sewer and chargeable to the fixed capacity of South Orange Village in the joint sewer, and

"Whereas, It is thought desirable that this agreement between the Village of South Orange and the Township of South Orange should be approved and ratified by the Joint Meeting of the municipalities contracting to build said sewer; therefore be it

"Resolved, That the said contract between the Village of South Orange and the Township of South Orange be and the same is hereby ratified and approved."

Inspectors' report read and placed on file.

Special committee on horse and wagon reported that they recommended not to purchase a horse and wagon at this time, but would recommend that the Inspector be given more leeway in hiring a horse and wagon. The report of the committee was accepted and adopted.

Report of Treasurer read and placed on file.

Moved that the accounts of the Treasurer and Secretary be referred to the auditing committee for audit. Carried.

It was moved that the salaries of the officers for the ensuing year be the same as for the present year, except the Engineer, which is hereby fixed at $1,000 per year instead of $2,000. Motion carried, 6 ayes, 0 noes.

Moved that the retainer of Adrian Riker as Counsel be $250 per year. Carried, 6 ayes, 0 noes.

Moved that the representatives be paid $5 for each meeting they attend, but not to exceed a total of $50 each during the year. Carried.

Moved that the Committee go into election of officers for the ensuing year. Carried.

The following officers were then chosen for the year:

Chairman—Francis Speir, Jr.
Engineer—Alexander Potter.
Secretary—Edward D. Tuttle.
Treasurer—Simeon H. Rollinson.
Counsel—Adrian Riker.

Mr. Potter made a verbal report on the Weppler case, and stated that Weppler's attorney had been to see him; the result being that the attorney finally stated he would be willing to accept $300 and a small fee in settlement.

Moved that the Engineer take the Weppler case up with Counsel and have Counsel submit his report to the Board in writing.

The following bills having been audited were ordered paid:

H. B. Halsey Co.	$ 1.10
Estate Jacob Winter	9.50
S. Messerer	7.00
Queen & Co.	135.00

J. J. Kenney	30.00
T. M. Debevoise	30.00
Francis Speir, Jr.	25.00
W. T. Baird	30.00
A. F. Eggers	30.00
Richard Hopkins	25.00
E. D. Tuttle	174.00
A. S. Webb	30.00
S. H. Rollinson	100.00
Petty cash bills	117.55

Adjourned.

E. D. TUTTLE,
Secretary.

Joint Meeting of September 26, 1907.

Roll called. Present: Chairman Francis Speir, Jr., A. F. Eggers, A. E. Webb, Wm. T. Baird, J. J. Kenney, Richard Hopkins, Thomas M. Debevoise.

Minutes of last meeting approved as printed.

Engineer's report read and ordered placed in minutes:

"September 26, 1907.

"Joint Sewerage Commission, South Orange, N. J.:

"Gentlemen—I beg to place before you certain matters in connection with the Joint Trunk Sewer.

"During the summer we have had little rain, and the flow in the sewer has been reduced to the minimum. Chief Inspector Sandford has kept me in touch with his work of inspection and there has been less trouble in the maintenance of the sewer this summer than for some time past.

"There are one or two portions of the sewer that require more attention than the other sections. One of these sections is the sewer through Vailsburg, which receives the effluent from Maybaum's slaughter house. This discharge from the slaughter house has a tendency to create deposits in the sewer for a couple of thousand feet below the point where the private sewer joins the Joint Trunk Sewer, and, in fact, odors arise from the discharge from the tank extending for two thousand feet below. While I have no desire to recommend that you refuse this slaughter house the privilege of the sewer, I think they should be compelled to prevent matters entering the sewer which cause annoyance and undue expense to the other taxpayers interested in the Joint Trunk Sewer. I have not taken up the question as to plans for the amelioration of

this condition, as I was not sure that it was my province to do so. I have thought that the duty of the Joint Sewerage Commission was confined more to the fixing of a standard for the sewerage matter which should enter the sewers rather than advising means for the rendering of the matter fit to come within the standard fixed by the Joint Sewerage Commission.

"The other sections of the sewer have given little trouble so far as the flow of the sewage is concerned. The Inspector has been placing locked manhole covers at points along the sewer where he finds a tendency on the part of some one, maliciously or otherwise, to tamper with the manhole covers.

"I beg to call your attention to the fact that the City of Elizabeth, in making connection with the Joint Trunk Sewer, does not exclude the roof water from the sewers, and in nearly every case the roofs are connected with the sewer. The contract between the Joint Meeting and the City of Elizabeth permits Elizabeth to discharge house drainage only, in that portion of the City between Woodbridge Avenue and the City limits; that is to say, through all of the sewer excepting half a mile, approximately, nearest the outlet, where the sewer was designed large enough to take care of the storm water from the City of Elizabeth. While the expression 'house drainage' in its strictest sense might be made to include not only roof water but also the sub-soil water, the expression is usually confined to refer simply to the waste from the houses, and in nearly every sewer ordinance that is drawn the right to admit roof water is not allowed except under special permit. The effect of the City of Elizabeth permitting leaders connected with the sewer will be to use up at an early date the capacity of 750,000 gallons per day that they have in the Joint Trunk Sewer. The effect of using a larger capacity than the contract calls for will be felt in Elizabeth much sooner than it will be felt in any other part of the sewer, for the sewer through Elizabeth would receive from this cause a greater volume of flow than the sewer was designed to carry, which would result in a blocking up of the sewer in Elizabeth, which blocking up could not be felt by any of the interested municipalities, as there is a considerable length of sewer between the City of Elizabeth and the first municipality above, in which distance the effect of the surcharge of the sewer below is greatly lessened. I think that it is my duty to bring the attention of your Board to this question and get a ruling from you in reference thereto.

"I have submitted to the Secretary an application from the Chairman and Clerk of the Township of Union, asking for permission to construct lateral sewers in Floral and Emerson Avenues adjoining North Avenue in Union Township. In order to expedite the work, I suggested to the persons interested in this construction to build their sewers, but to hold up on the connection

until such a time as your Commission should take formal action giving them the right to use the Joint Trunk Sewer. This preliminary work has been done under the supervision of Inspector Sandford, who reports that they have been laid in a satisfactory manner. I see no reason why permission cannot be granted to these people to use the Joint Trunk Sewer, since the capacity required for these sewers is charged up against the quota allowed the Township of Union in their contract with the Joint Sewerage Commission.

"Several months ago I was authorized to purchase from Queen & Company two additional Dibble recording gauges. One of these gauges was to be a spare one. As we were anxious to assist Roselle Park in determining the exact amount of flow that was coming from their local sewers, as compared with the combined amount that was coming from Roselle Park and Union Township, which combined amount was recorded at the junction of the Roselle Park sewer and the Joint Trunk Sewer, I held, subject to the approval of the Joint Meeting, one of these gauges for Roselle Park. While we have had these gauges for three or four months, they came to us in an incomplete state. Ever since the death of Mr. Dibble, the inventor and manufacturer of these recording gauges, we have had great trouble to get any satisfactory dealings with Queen & Company. I would therefore recommend that we secure a gauge to take the place of the one which I have purchased and disposed of to Roselle Park, and that I be permitted to secure another gauge manufactured by another concern which is recommended as being more positive in its action and more satisfactory all around. The cost of this new gauge is about the same as Queen & Company now charge us for the Dibble gauge. I therefore request action upon this matter.

"I beg to call your attention to the fact that the Township of South Orange has started work upon the construction of their system of sewerage. The specifications have been so drawn as to eliminate all ground water. This has been rendered necessary because of the capacity which South Orange Township has in the Joint Trunk Sewer being exceedingly limited. The cost to the contractor for the construction of these sewers absolutely tight will be twenty per cent. in excess of the cost of sewers constructed under ordinary specifications. The sewers now being constructed are not connected with the Joint Trunk Sewer at present, but I take it that there is now nothing to prevent the Township of South Orange from connecting with the Joint Trunk Sewer at various points along the line of the sewer. It is the intention of the Township to install weir manholes at points of junction with the Joint Trunk Sewer, excepting at two places, where only a few hundred feet of lateral sewer is connected with the Joint Trunk Sewer. In such cases there is no need of establishing weir manholes, because no results of value could be secured

from so slight a flow. A weir manhole will also be placed at the boundary line between the Township of Millburn and the Township of South Orange, at which point a large percentage of the sewage from South Orange Township will enter the sewer.

"In regard to the Weppler matter, Mr. Adrian Riker, Counsel for the Joint Meeting, has been in Europe most of the summer, returning yesterday. I could not succeed in reaching Mr. Riker on the telephone to-day, so can make no further report upon this matter. Mr. Wolber, attorney for Mr. Weppler, has been in consultation with me from time to time in regard to the claim. I advised him, without admitting at all the validity of the claim against the Joint Meeting, that I would recommend the payment of $300, subject to the approval of Counsel, in order to save the expense of litigation. Mr. Weppler's contract clearly says that if the spring is destroyed the Joint Meeting will pay him $500. The spring was destroyed, but afterwards it was restored to its original condition without the aid of the underdrain. Mr. Wepler says that the water came from the underdrain at a lower level than the spring. With my own eyes I saw the water coming from the spring after the construction of the sewer. The spring was afterwards maliciously destroyed, by whom I have no knowledge. Mr. Wolber has delayed action on this matter, trying to get an adjustment of the claim without recourse to law. Mr. Weppler now desires to take the matter out of the hands of Mr. Wolber because of his delay.

"Respectfully submitted,

"Alexander Potter."

Moved that the recommendations of the Engineer be taken up separately. Carried.

Moved that the Secretary communicate with the Street Commissioner of Elizabeth in reference to the draining of storm water into the sewer. Carried.

Moved that permission be granted the Township of Union the right to tap the joint sewer on Bayway at the points named in their application to the Engineer, the work to be done under the supervision and inspection of the Engineer; but such consent to be on condition of connecting the two connections into one when it becomes necessary to have weir gauges inserted. Carried.

Moved that the Secretary render a bill to the Borough of Roselle Park for $60.00 for weir gauge set and used by the Borough and belonging to the Joint Meeting, and upon the receipt of payment for same the Engineer to purchase another gauge as per his recommendation. Carried.

Mr. Wolber, representing Mr. Conrad Weppler in his claim

against the Joint Meeting of $500.00, which he claims as due him because the Joint Meeting destroyed a spring of water upon his property during the construction of the sewer, addressed the Board in reference to the case, and suggested that the Joint Meeting make a compromise with his client.

Moved that Counsel be requested to report at an early date, and if necessary to have a special meeting. Carried.

Inspector's report read and placed on file.

Treasurer's report read and placed on file.

The Secretary read the following report:

"The expenditures for the fiscal year ending July 1, 1907:

Engineer, Potter	$ 2,000.00
Inspector, Sandford	1,100.00
Assistant Inspector, Hayward	640.00
Assistant Inspector, Sandford	200.00
Secretary, E. D. Tuttle	300.00
Treasurer, Wm. Rollinson	50.00
Treasurer, S. H. Rollinson	150.00
Labor, materials, rents, Ex. Committee and sundry expenses	2,028.75
	$ 6,468.75

"The receipts credited to maintenance account were:

July 1, 1906, fourth assessment, 1906	$ 2,100.00
Jan. 1, 1907, first and second asmt., 1907	4,200.00
Apr. 1, 1907, third and fourth asmt., 1907	4,200.00
Total	$10,500.00

Less:

July 1, 1906, amt. overdrawn	$ 178.01	
Total amt. expended	6,468.75	6,646.76
Bal. to credit of maintenance account		$ 3,853.24
Plus return premium, bond W. Rollinson		11.00
		$ 3,864.24

"The following additional amounts were assessed during the year:

Assessment to cover the claim of J. P. Hall, contractor for the 4th section	$ 712.00
Assessment to cover the cost of the Lyons Avenue extension on Section 5	1,791.40

"The following additional amounts were paid during the year:

Claim of J. P. Hall	$ 712.00
Harrison Construction Co., contractors for the Lyons Avenue extension (on account)	1,701.83

"Balance Sheet, July 1, 1907:

Cash	$4,084.91	
Petty cash	100.00	
Rights of way	125.75	
J. P. Hall		$ 100.00
Earle & Dougherty		91.40
Over assessment		24.58
Harrison Construction Co.		.10
Interest account		140.77
Maintenance		3,864.24
Balance due on Lyons Avenue extension		89.57
	$4,310.66	$ 4,310.66

The Secretary presented the following as his resignation:

"Irvington, N. J., September 26, 1907.

"To the Joint Meeting in the Matter of the Outlet Sewer:

"Gentlemen—Owing to a change in my place of residence that will occur in the near future, I will be so located that it will be impossible for me continuing to act as your secretary.

"In tendering this, my resignation, I desire to express to you my appreciation of the many kindly associations of the past. It has been a great pleasure to me to feel that it has been my good fortune to have been connected with the Joint Outlet Sewer (with the exception of one year) from its first inception, and to have assisted in so far as able to the organizing and constructing of so great an undertaking as the Joint Outlet Sewer.

"Thanking you for all the many kindnesses of the past, and with my best wishes for the continued success of this important work during the years to come, that is to be so great a benefit and blessing to future generations, I remain, yours truly,

"E. D. Tuttle."

It was moved that the resignation of Mr. Tuttle as Secretary of the Joint Meeting be accepted. Carried.

The following names were then presented as candidates to fill the vacancy: Warren T. Frey and Arthur Tepper. Upon vote being taken, Mr. Tepper having received a majority of votes, was declared elected.

The Harrison Construction Company presented a bill for $28.16 as interest on deferred payment on their contract for the construction of the Lyons Avenue extension, which, with their letter accompanying same, was referred by the Chairman to Counsel, which, with his reply, is as follows:

"Newark, N. J., July 3, 1907.

"Mr. Francis Speir, Jr., 52 Wall Street, New York City:

"Dear Sir—We enclose you herewith a bill for retained percentage due us on Lyons Avenue Joint Trunk Sewer contract, amounting to $89.57.

"We also inclose a bill for interest on the amounts, which should have been paid to us according to the terms of the contract, but which we did not receive at the time same was due. We have charged interest from the date payments were due until they were paid, and we see no reason why we should not be refunded this money.

"We wish you would give this matter your attention, and see that we get check for this at your next meeting.

"Very truly yours,
"The Harrison Construction Co.
"H. L. Harrison, President.
"Per S. D. K."

"July 11, 1907.

"Mr. Adrian Riker, 164 Market Street, Newark, N. J.:

"Dear Sir—Replying to your letter of July 6th, I have examined the final estimate of Harrison Construction Company and find that the bill for retained percentage is correct, and I have therefore O. K.'d the bill for this amount.

"So far as the bill for interest is concerned, there is no provision in the contract that if the bill is not paid on time interest wll accrue. So far as the dates are concerned, I find that they are correct, and consequently if interest is allowed the amount is correct. If this amount was deliberately kept from the contractor I should say that the bill should be paid, but as the delay was more or less incidental to the routine of the work of the Joint Meeting I take your view of it that the contractor should have to stand this misfortune.

"I enclose letter to Mr. Speir and also two bills.

"Yours very truly,
"Alexander Potter."

"Newark, N. J., July 12, 1907.

"Mr. Francis Speir, 52 Wall Street, New York City:

"Dear Sir—I enclose herewith letter from the Harrison Construction Company to you, dated July 3d, and their two bills

therein referred to; also a letter from Mr. Potter with reference thereto.

"The position I take with reference to their claim for interest is that it is late in the day for them to make a claim after having received and receipted for payment. Also the view of Mr. Potter is not without weight that payment could not be made until authorized by the Joint Meeting. Yours truly,

"ADRIAN RIKER."

On motion the bill was rejected and payment declined, vote being 6 ayes, no noes.

"New York, Sept. 25, 1907.

"The Joint Meeting, South Orange, N. J.:

"Gentlemen—The work of constructing and maintaining the sewer on Lyons Avenue extension by the Harrison Construction Company has been satisfactorily performed in accordance with the terms of the contract. I recommended the payment of the 5 per cent. retained. Yours truly,

"ALEXANDER POTTER."

The Engineer having reported that the work on the Lyons Avenue extension had been fully completed according to the terms of the contract with the Harrison Construction Company, the following resolution providing for the payment to the Harrison Construction Company of the balance due, upon the filing with the Secretary of a certificate of final acceptance of the completion of the work, was offered by Mr. Webb:

"Whereas, The work done on the Lyons Avenue extension by the Harrison Construction Company having been completed and accepted by the Joint Meeting January 18th, 1907, and the contractors having been paid the whole amount of their contract, amounting to $1,791.40, except 5 per cent. ($89.57), which was to be retained for six months; and

"Whereas, The period of six months having expired since the final acceptance of the work done by the Harrison Construction Company under their contract for the Lyons Avenue extension of the Joint Sewer, and the Engineer having reported that the work has been kept in complete repair, and that he has not caused any money to be expended in such repairs;

"Resolved, That there be paid to the Harrison Construction Company the sum of $89.57, being the amount of 5 per cent. of the gross amount earned by them under said contract, reserved in accordance with the 26th section of their contract."

Resolution adopted—6 ayes, 0 noes.

The Secretary reported the receipt of a check for $25.00 from Mr. Christianson for tapping the joint sewer on Lyons Avenue in the Township of Springfield, which was turned over to the Treasurer.

The following letter was received from Inspector Sandford:

"South Orange, N. J., July 23, 1907.

"Mr. Francis Speir, Jr., 52 Wall Street, New York City:

"Dear Sir—At the last meeting of the Joint Sewerage Commission I was authorized to hire a horse from time to time as the needs of the work required, the expenditure for such rental to be limited to what was reasonable and fair.

"Recently I have had a number of occasions to use a horse, notably in connection with the change of the weir manhole at Lyons Avenue, due to the filling in of the ground over the sewer by the owner of the land. Also some necessary work on Bayway, ordered by the Chief Engineer, upon the cleaning required at different parts of the sewer, and other work requiring the use of a horse. In some instances the need of the horse came up quickly, and in each case I experienced great difficulty in finding a horse because of their previous engagement by other parties, and the owners of them requiring $5.00 a day for such use.

"Not only must the Joint Meeting pay this high rate per diem, but the time consumed by me in making arrangements for a horse is so great as to rob the Joint Meeting of the services which I could otherwise perform.

"Again, in the employment of men we are obliged to keep men waiting the convenience of the man who owns the horse. All of which adds expense.

"While the actual cost of rental may not foot up in a year to the total amount that your Board would be required to pay to rent one permanently, when you take into consideration my own time saved for other work on the sewer and the lessened cost of labor, the total cost to the Joint Meeting directly or indirectly during the year will be much greater than the cost of rental.

"The Joint Meeting now pays $5.00 a month for the use of a place to store the needed supplies, ropes, cleaning apparatus, etc., which would be saved by the rental of a horse, for it would be my plan to purchase a horse myself and rent it to the Joint Meeting for, say, $30.00 a month, which amount would take care of not only the keep of the horse but other expenses, such as shoeing, repairs of the outfit, etc., which are not ordinarily included in the rental of a horse, and also the rent of the storehouse.

"I present this matter to your attention because I know that this arrangement will not only prove more satisfactory but cheaper to the Joint Meeting than any other method of handling

the horse question, and I trust that the same will meet with your approval.

"I have gone over the bills for the last few years, and while the specific item of horse hire does not foot up to $360.00 a year, still the cost of horse hire, coupled with the labor and expenses which could have been avoided had a horse been provided me, is greater than $360.00 a year.

"The plan herein suggested relieves the Joint Meeting of any responsibility as to the care of the horse, and in my opinion is the proper method of handling this matter.

"Yours very respectfully,

"F. Ross Sandford,

"Inspector."

Moved by Mr. Eggers that the offer of the Inspector be accepted. Carried.

The date of the inspection of the sewer system was set for Saturday, October 12, the Engineer to arrange the time.

The following bills were read, and being properly audited, were ordered paid—6 ayes, 0 noes:

Alexander Potter	$ 83.33
E. D. Tuttle	87.00
Corey Sandford	50.00
F. R. Sandford	100.00
F. R. Sandford	100.00
Alexander Potter	83.33
Corey Sandford	50.00
Petty cash account	269.43
Town Talk Printing Co.	9.00
Thomas A. Sandford	4.13
W. A. Reeve	4.84
Adrian Riker	325.00
Cone & Dawes	10.40
Harrison Construction Company	89.57
Alexander Potter	83.34
F. R. Sandford	100.00
Corey Sandford	50.00
F. R. Sandford	18.71
Queen & Co.	20.00
Corey Sandford	7.65

Adjourned.

E. D. Tuttle,

Secretary.

Annual Inspection.

The annual trip of inspection was made on Saturday, October 12, 1907. The entire system was gone over from Millburn to the outlet at Bayway. Among other points visited was the spring of Conrad Weppler.

Present: Chairman Francis Speir, Jr., A. F. Eggers, A. E. Webb, Richard Hopkins, William T. Baird and J. J. Kenney.

ARTHUR TEPPER,
Secretary.

Joint Meeting of December 26, 1907.

Roll called. Present: Chairman Francis Speir, Jr., A. F. Eggers, A. E. Webb, William T. Baird, J. J. Kenney, Richard Hopkins, Thomas M. Debevoise.

Minutes of last meeting read and approved as printed.

The Treasurer read his report, which was ordered placed on file.

The Engineer's report was read and ordered placed on the minutes:

"December 26, 1907.

"Joint Meeting, South Orange, N. J.:

"Gentlemen—I beg to present to you my report.

"*On the Matter of the New Contract.*—On May 23rd, 1907, the committee recommended the terms of a new contract for maintenance. These were submitted to Mr. Riker, and he prepared a separate contract in conformity to the committee's report. The Township of Millburn has objected to the execution of the contract as it stands, and no further action has been taken upon this matter. I assume that this question should receive the attention of the Joint Meeting.

"*The Transference of Sewer Rights.*—I beg to call the attention of the Joint Meeting to the matter of the agreement between Summit and Millburn on the one hand, and South Orange and West Orange on the other hand, as to the use of certain portions of the sewer which have been paid for by Summit and Millburn, but are not used by them. This question still remains unsettled.

"*Raising of Manhole in Dorer Property.*—On account of the opening of a street it has become necessary to raise the lower

syphon manhole at Lyons Avenue. The work was done by M. D. and J. Dorer at an expense of $85.95, it being the opinion of myself and Mr. Sandford that this was the most economic method of handling this matter. The cost of this work, in my opinion, should be borne by the Town of Irvington, the City of Newark, and the Village of South Orange in the proportion of their holdings. This, however, raises a rather interesting question which, while it does not involve any serious outlay of money, still is a matter which should be decided by Counsel.

"In the construction of the Joint Trunk Sewer the manholes had to be placed at the level of the streets, as we found them. In but a few cases had the street grades been established when the sewer was constructed. Even if these grades had been established, no attention could be paid to them, because if the grade was such as to bring the manhole above the existing street surface it would form an obstruction to travel, and if the established grade of the street should be below the existing grade the construction of the manhole to the established grade would prevent access to the manhole. Where street grades are established along the line of the sewer which require the raising or lowering of manholes, the question as to who shall share the expense of these changes arises, whether the Joint Meeting as a whole or the town that has directed this change shall bear the expense. I believe that there is no ruling at present by Counsel on this point, and before it is submitted to Counsel I presume an expression of opinion from the representatives of the different municipalities would be in order.

"*Weppler Claim.*—Since the visit of the members of the Joint Meeting to the property of Mr. Conrad Weppler, I have written to Mr. Adrian Riker a letter of which the following is a copy:

"'November 23, 1907.

"'Mr. Adrian Riker, 164 Market Street, Newark, N. J.:

"'Dear Sir:—On the last inspection of the Joint Trunk Sewer the Commission visited the site of the Weppler spring and expressed themselves as being opposed to the payment at the present time of any amount on account of the loss of this spring.

"'The facts of the case as I have pointed out before are as follows:

"'Before the construction of the sewer was started, there was a spring issuing about 18 inches above the level of the water in the brook running through Weppler's land. While the sewer was being constructed, this spring ceased to flow. Upon the completion of the sewer and the refilling of the trenches, the contractor notified me that he had restored the spring to its original position and volume. I thereupon examined the spring and found

that the water was flowing from the original location of the spring and in the same volume. About a week later I was called upon by Mr. Weppler, who told me that he would claim damages because we had destroyed his spring. I examined the location again and found evidences of a physical tampering with the spring, and that no water was issuing from this location. I have no evidence whatever that this tampering was done by Weppler. About five or six feet away from where the spring was originally located and at an elevation a foot lower, there is an outlet for an underdrain from the Joint Trunk Sewer, which is probably 100 feet away and parallel with the brook.

"'I cite you these facts so that you will be apprised of the physical conditions before any action is begun looking to a recovery on the part of Weppler, as is indicated in various letters from his attorney, Mr. Joseph Wolber.

"'In this connection I beg to state that I have just received a letter from Mr. Wolber, dated November 21st, enclosing a form of release which he asked me to submit to you if the same meets with my approval. If a settlement is to be made the form is satisfactory. My own impression is that so far as the damages upon Weppler's property are concerned, there is no money due him, but I cannot express my opinion as to what might legally be due him. This is a matter entirely for you to determine in advising the Board how to proceed.

"'Yours very truly,

"'ALEXANDER POTTER.'

"To which I have received the following reply:

"'Newark, N. J., November 25, 1907.

"'Alexander Potter, Esq., 143 Liberty Street, New York City:

"'Dear Sir:—I have your letter of November 23rd, in the matter of the claim of Conrad Weppler for damages.

"'It appears clear from your statement:

"'1. That a spring existed on Mr. Weppler's land before the construction of the sewer was commenced.

"'2. That the Joint Meeting agreed as part of the consideration for his grant of the right of way to indemnify him against damage of this spring, and in case such damage was done either to the quality or quantity of the water, to pay $500 damages therefor.

"'3. That after the construction of the sewer the spring disappeared and in its place there has been established a discharge from an underdrain from the sewer.

"'If these facts are established beyond reasonable question before a jury, Mr. Weppler will undoubtedly recover the full amount agreed to be paid by the Joint Meeting, namely, $500.

"'I understand there is no question about the spring having entirely disappeared. Under these circumstances, I would recommend to the Joint Meeting a settlement of this matter for the sum named, namely, $350.

"'I return the form of release, which is satisfactory to me.

"'Yours truly,

"'ADRIAN RIKER.'

"The form of release referred to in these letters is handed to you herewith for your consideration.

"Condition of Outlet.—At the time of the visit of the members of the Joint Meeting to the outlet of the sewer, considerable discoloration was noted. This discoloration was as much of a surprise to me as to the members of the Commission, because since the sewer was constructed we have watched very carefully for any discoloration, and at no time has the effluent from the sewer looked as offensive as on the day of the visit of the Commission to this point.

"Since that time we have made every effort to discover the cause of this trouble, and we find that the Waclark Wire Company has a new building on Bayway, a short distance above the outlet, and the vulcanizing tank is emptied into the sewer, causing the discoloration which was noticed on the visit. This vulcanizing tank is cleaned out at the week's end usually, and it will be remembered that the visit of the Commissioners took place on Saturday.

"Sewer Rods.—The sewer rods that have been used upon the Joint Trunk Sewer have become worn to such an extent that Inspector Sandford has been obliged to borrow the sewer rods belonging to South Orange Village. Mr. Allen, the Superintendent, kindly placed these at his disposal until such a time as other rods could be purchased by the Joint Meeting. I recommend the purchase of 100 of these rods. We have been in the habit of purchasing them from the Harold L. Bond Company. In order to test their efficiency, this company has offered to furnish us 50 rods made of iron instead of wood at the same price as we have been paying for the wooden rods, and I would recommend that 100 rods be purchased, 50 of iron and 50 of wood, in order that we may test the relative merits of the two. The greatest objection to the use of iron rods is their added weight, but Mr. Sandford advises me that personally he would like to have some iron rods so as to test their efficiency. Now that he has a horse, the weight is not so serious a feature as it was formerly. Price is $50 a hundred.

"Storm Sewers in Vailsburg.—In the construction of sewers in Vailsburg, watertight methods of construction were not used. The character of the ground through which these sewers were

constructed is for the most part of the year water-soaked. The result is that after a heavy rain storm considerable water finds its way into the sewers in this district. Besides this, throughout the Town of Vailsburg all the manholes have perforated covers and a large volume of storm water finds its way into the sewers during these heavy rain storms. To overcome this objectionable condition in Vailsburg, the City of Newark is now contemplating the construction of storm sewers. The construction of these storm sewers will reduce the ground water to such an extent that a great deal of the trouble will be overcome. Besides this, if the manhole covers are blocked up the congested condition of the sewers in Vailsburg will cease. This refers not only to Vailsburg but to the sewers in Irvington as well. I have made an investigation of these sewers during the recent rain storm and find that without question the open manhole covers the responsible for the congested condition of the sewers. There is no doubt, however, that many of the connections from the houses to the sewers have been laid without any regard to their being water-tight, and large volumes of water find their way into the sewers in this way.

"*South Orange Township Sewers.*—I beg to report that the construction of sewers in South Orange Township has been progressing during the last few months. The work is not as far advanced as it should be, but the character of the work done by these men is very satisfactory. The leakage that we find in the completed work is very small compared with the average leakage to be found in work of this character, and there is every reason to believe that the quota secured from Millburn and South Orange Village by South Orange Township will not prove a drag upon these municipalities.

"*Roselle Park Sewer.*—Since the last meeting the weir at Roselle Park shows that there is being discharged into the Joint Trunk Sewer from that Borough an average of 694,000 gallons per day. Roselle Park's capacity in the Joint Trunk Sewer is 375,000 gallons per day. A portion of this excess comes from sewers located outside of Roselle Park proper, from Elmora and other sections. These sewers, however, drain into the sewers owned by Roselle Park and consequently Roselle Park is directly responsible for this excess until they can demand that the excess should be borne by Union Township, in which event the Joint Meeting will collect from Union Township under its contract for such excess as it is then shown that Roselle Park is discharging.

"At the last meeting of the Joint Sewerage Commission I called your attention to the fact that the City of Elizabeth was discharging a great deal of leader water into the sewer. Since

then I have had a conference with Mr. Thompson, the Street Superintendent, and he informs me that he is doing all in his power to remedy this violation of their agreement.

"Respectfully submitted,

"ALEXANDER POTTER."

Moved that the recommendations of the Engineer be taken up separately. Carried.

On the Matter of the New Contract.—Discussed, but no action taken.

Transferrance of Sewer Rights.—Secretary was directed to notify Adrian Riker, Counsel, that this matter be finally closed before January 1st, 1908. Carried.

Raising of Manhole in Dorer Property.—Moved that the question of who should pay for this work be referred to Counsel. The Engineer was instructed to take the matter up. Carried.

The Secretary was also directed to communicate with Counsel.

Weppler Claim.—Mr. Weppler and his counsel present. After hearing Mr. Weppler and discussing the question, a motion was made that Mr. Weppler's claim ($350 as recommended by Counsel) be not paid, seconded. Motion carried, 4 ayes, 2 nays.

Sewer Rods.—Motion was made that 100 rods be purchased, 50 of iron and 50 of wood, so that relative merits of the different materials may be tested. Seconded. Carried.

Roselle Park Sewers.—Motion made that Counsel take up with the proper authorities the question of capacity and make report at next meeting. Seconded. Carried. Secretary directed to notify Counsel.

The Inspector's report read and ordered placed on file.

The oath of office of Secretary was received and ordered placed on file.

In accordance with instructions at last meeting, the Secretary rendered a bill to the Borough of Roselle Park for weir gauge set and used by Borough, amounting to $60, under date October 15, 1907.

As this is still unpaid, the Secretary was directed to refer it to Counsel.

The following is a copy of a letter sent to the Street Commissioner of the City of Elizabeth, by the Secretary, as instructed at last meeting:

"Street Commissioner of the City of Elizabeth, N. J.:

"Dear Sir:—As Secretary of the Joint Body maintaining the Joint Trunk or Outlet Sewer to tidewater through Elizabeth, I am instructed to call your attention to the fact that, contrary to the rules and regulations of the Joint Body, storm water leaders are being connected with the Joint Trunk Sewer in Elizabeth, where such action is not authorized by the contract between the Joint Body and the City of Elizabeth. At the present time such disposal of storm water does not, I believe, amount to a matter of importance, inasmuch as the City of Elizabeth has an absolute right to a capacity of 750,000 gallons in the Joint Trunk Sewer, over and above its right to storm water facilities in the area covered by the contract. The matter, however, may later assume serious proportions, dependent on the growth of the City of Elizabeth, and the use made of its contract capacity. The Chief Engineer of the Joint Trunk Sewer, Mr. Alexander Potter, has also been instructed by the Joint Body to call your attention to the matter.

"Very truly yours,

"ARTHUR TEPPER,

"Secretary.

"Millburn, N. J., October 18, 1907."

To which the following reply was received:

"Elizabeth, N. J., Nov. 18, 1907.

"Mr. Arthur Tepper, Secretary Joint Municipalities, Millburn, N. J.:

"Dear Sir:—I beg to state that I have the matter of roof leaders connecting with sewer of Joint Municipalities in this city in hand, and am working on the matter at the present time. I will give this my earnest attention.

"Very truly yours,

"N. K. THOMPSON,

"Street Commissioner."

The following bills were read and being properly audited, and a vote being taken by roll call, were directed to be paid:

F. R. Sandford	$ 30.00
F. R. Sandford	100.00
Corey W. Sandford	50.00
Corey W. Sandford	50.00
F. R. Sandford	30.00
F. R. Sandford	100.00

F. R. Sandford	30.00
F. R. Sandford	100.00
Alexander Potter	83.33
Alexander Potter	83.33
Alexander Potter	83.33
Corey W. Sandford	50.00
M. D. & J. Dorer	85.95
J. C. Baunach	12.25
O. A. Dohm	2.25
H. B. Halsey Co.	2.20
S. Messerer	5.00
R. A. Gardner	8.50
Francis Speir, Jr.	20.00
A. F. Eggers	20.00
A. E. Webb	30.00
Wm. T. Baird	20.00
Thomas M. Debevoise	15.00
J. J. Kenney	30.00
Richard Hopkins	30.00
Herbert S. Fish	7.00
The Summit Herald	18.00
N. Y. & N. J. Telephone Co.	34.85
Simeon H. Rollinson	100.00
Arthur Tepper	87.00
George Smith	20.00
Patrick Larney	10.00
Arthur Tepper	91.31
F. R. Sandford	14.92
Total	$1,454.22

Mr. Debevoise offered the following resolution:

"Resolved, That the several municipalities do raise and pay to the Treasurer of the Joint Meeting the sum of $2,100, which shall be assessed upon the joint municipalities in the proportion fixed by the contract between the several municipalities, providing for the care and maintenance of the joint sewer, i. e., each municipality paying an equal amount, or one-seventh of such assessment; and, further, that the Secretary be directed to notify the several municipalities of such assessment and the amount to be paid by each; and, further,

"Resolved, That the said moneys be paid to the Treasurer within twenty days from the 26th day of December, 1907."

Upon a vote being taken by roll call the resolution was adopted.

Adjourned.

ARTHUR TEPPER,
Secretary.

Joint Meeting of March 26, 1908.

Roll call. Present: Chairman Francis Speir, Jr.; South Orange represented by Wm. T. Baird, West Orange by J. J. Kenney, Irvington by Warren T. Frey, Millburn by Wellington Campbell, M. D., and Summit by O. B. Merrill.

Moved and seconded that the minutes of the last meeting be approved as printed. So ordered.

Mr. Adrian Riker, Counsel, reported as follows:

"*Re Raising of Manhole on Dorer Property.*—It appearing that the manhole in question is not within the limits of any public street of the Town of Irvington, and that the change has been made by direction of the Engineer of the Joint Body within the limits of its right of way, the expense of the change becomes part of the general maintenance of the sewer, to be paid by the Joint Body.

"On the general payment of the cost of changes in public streets due to the changes of the grade of those streets, Counsel is of the opinion that inasmuch as the municipalities have the use of the sewers in their streets for local sewerage, it is fair that each municipality should bear the expense of changes in manholes made necessary by changes in their streets.

"*Re Bill for Weir Gauge, Roselle Park.*—That as the gauge in question has been removed for repairs, and has not yet been replaced, therefore the bill is not due until gauge shall have been replaced.

"*Re Roselle Park's Capacity in Joint Trunk Sewer.*—As Mr. Hopkins, Millburn's representative, met the Roselle Park Commission, and they claim that they have done all that they can in the matter, and are willing to meet the Joint Meeting to discuss the situation, and as Mr. Potter, Engineer, reports that he notified the members of Roselle Park Commission to attend this meeting, which they have failed to do.

"Therefore at the request of the Counsel, a motion was made and duly seconded that the Joint Meeting instruct Counsel to notify Roselle Park to get within their capacity and if this is not done that Counsel file bill against the Borough of Roselle Park in the Court of Chancery."

Motion carried.

"*Re The Matter of the Contract Adjusting the Cost of Sewer between Millburn and Summit on the One Hand and South Orange and West Orange on the Other.*—Counsed reports that the papers have been in the hands of the several municipalities for more than a year and are now in the hands of the South Orange representatives.

"Re Weppler Claim.—Counsel advises that the Joint Meeting settle direct with Mr. Weppler."

In this connection, a motion was made and duly seconded, that the motion adopted at meeting of December 26th, 1907, whereby it was decided that Mr. Weppler's claim be not paid, be reconsidered. Motion carried.

A motion was then made and duly seconded that the Chairman of the Joint Meeting be authorized to settle the claim of Mr. Weppler against the Joint Meeting for a sum not to exceed $350.00.

Upon a vote by roll call being taken motion was carried. 5 ayes, no noes.

"Re Capacity Rights.—That the various municipalities own in severalty their capacities in the Joint Trunk Sewer. Jont Meeting cannot transfer the capacity rights, but should lay the question of transferrence before the Sewer Boards of the interested municipalities."

Upon motion made and seconded, it was ordered that the report of Counsel be received and incorporated in the minutes of this meeting.

The Engineer then read the following report, which was accepted and ordered placed in the minutes:

"April 4, 1908.

"Joint Sewer Commission, South Orange, N. J.:

"Gentlemen:—Since the last meeting of the Board both your Engineer and Inspector have spent considerable time upon the various branches of the Joint Sewer, especially through the Irvington section, endeavoring to find out definitely, if possible, the exact cause of the flooding of certain sections of the Irvington sewers during and immediately after heavy rain storms and thaws. This work has resulted in securing certain information which we hope in the future will materially relieve the condition of these flooded sections of Irvington, at least to some extent.

"We have found that within the City of Newark during rain storms certain property owners have deliberately gone out into the middle of the street and removed the manhole covers, permitting a free flow of the surface water into the sewers. This we have found at two different points.

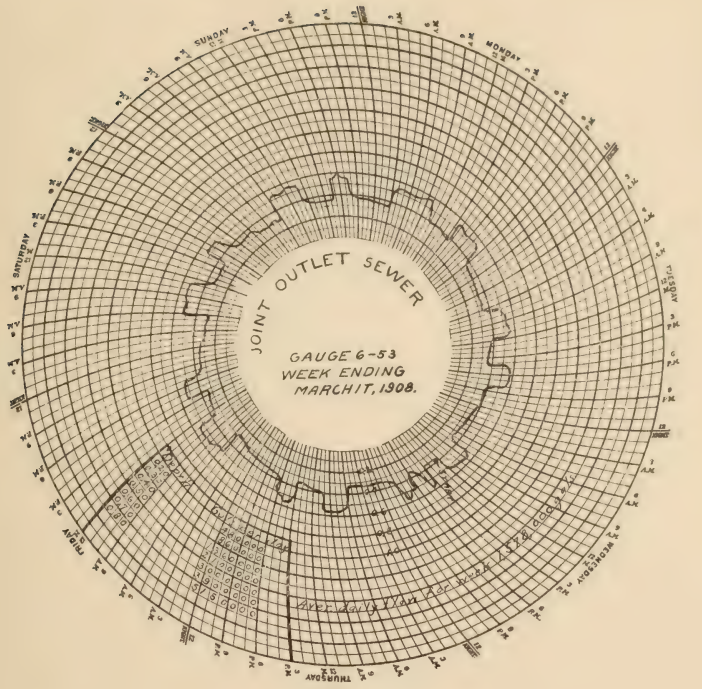
"For some time a pit in a car barn on 16th Avenue in Newark has been connected with our sewer. The grade of the ground around the barn is such that nothing but the wash from the

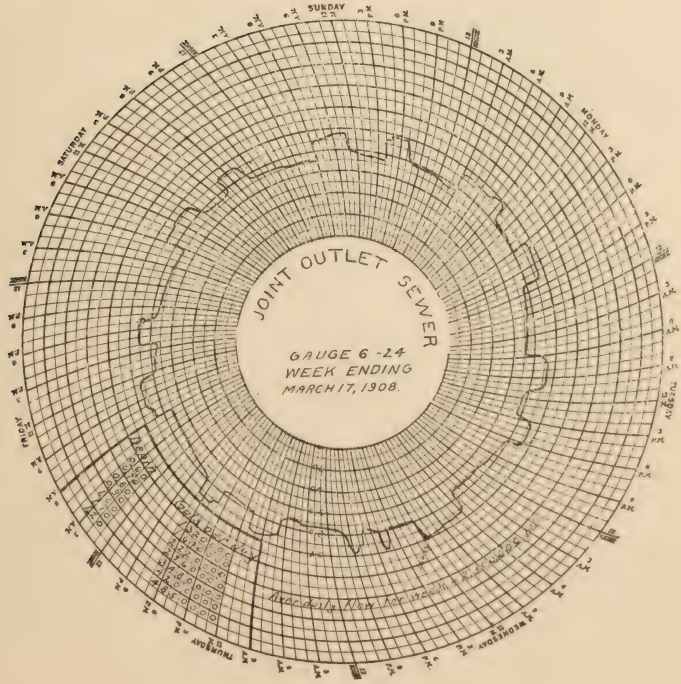
street cars could normally get into the sewer. We have quite recently discovered, however, that from a point in 16th Avenue, to which point a considerable drainage area is contributary, a drain extends terminating in the car barn pit, so that through this circuitous route we have been receiving into our sewers a large amount of surface water. We have asked the Newark authorities to see that this is stopped and it is to be hoped that this trouble will be remedied forthwith.

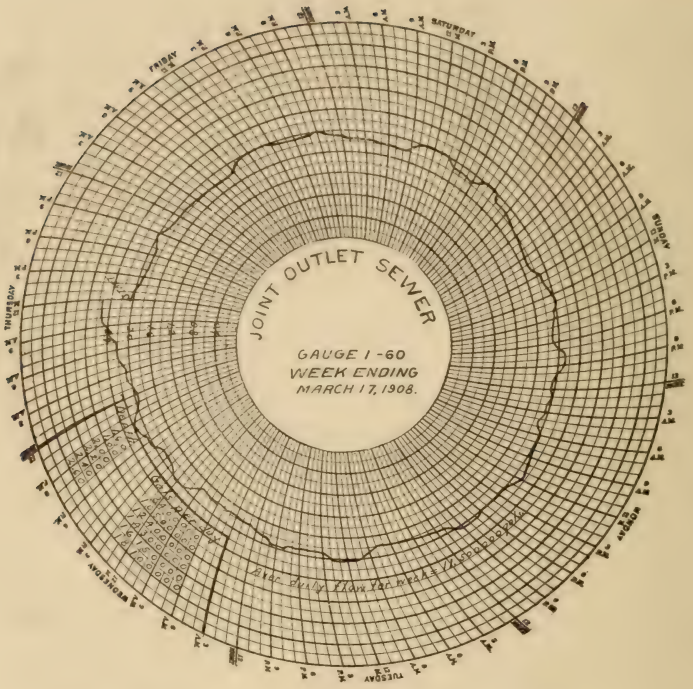
"The Town of Irvington has also authorized the construction of a sanitary sewer on Augusta Street, which will unquestionably relieve the local difficulties which have existed upon this street for some time, due to the fact that cellars have been built upon a level with the existing sewers, causing the sewage to back up into the house connections at every rain storm.

The Weppler Spring.—Acting under instructions from your Board, I directed the inspector to dig down and examine whether or not the under-drain had been cut off as stated in a letter from the foreman of the Harrison Construction Co. This investigation was to determine whether or not the water now entering the stream from a point in the general location of the original spring was contributed by the under-drain or whether it came from the original source of the spring. The point where this sand bag was supposed to be placed was off our right of way. We proceeded to make an excavation when the men were driven off by Weppler. Another attempt was made two days later with the same results. The cost of this investigation was $9.40, and we have awaited the action of the Joint Meeting as to whether we should proceed further and take the chance of arrest, as Weppler threatened to arrest the men for trespass.

"Examination of Vailsburg Flow.—A house to house investigation was conducted by one of my assistant engineers and the inspector to determine how many leaders were connected with the sewer, and to find out other sources from which the increased flow of water during and after rain storms came. A number of houses were found whose leaders were connected with the sewer, and an effort should be made to have these connections removed. The Newark authorities alone can attend to this matter and relieve the sewer from this excessive water.


JOINT OUTLET SEWER
GAUGE 6-53
WEEK ENDING
MARCH 17, 1908.
SUNDAY
MONDAY
TUESDAY
WEDNESDAY
THURSDAY
FRIDAY
SATURDAY


JOINT OUTLET SEWER
GAUGE 6-24
WEEK ENDING
MARCH 17, 1908.
SUNDAY
MONDAY
TUESDAY
WEDNESDAY
THURSDAY
FRIDAY
SATURDAY



"Since our last meeting the whole of the Summit sewage is now being conducted to the Joint Trunk Sewer. Accompanying this report are three diagrams indicating the record of the flow at different parts of the Joint Sewer during the week ending March 17th, 1908. Figure 1 is the record of flow at the Summit line, designated as gauge 6-53. Figure 2 is the record of the flow near the Fandango Mills, which records the combined sewage flow of Summit and Millburn. Figure 3 is a record from the main stem of the Joint Trunk Sewer registering the flow from all the municipalities for the week ending March 17th.

"The purpose of presenting these diagrams is to show the effect of the discharge of sewage from Summit both when the pumps are in operation and when they are not. It also shows how far and to what extent the additional volume of flow coming from Summit during the time of pumping is felt in the Joint Trunk Sewer. It takes one-half hour from the time of starting the pumps in Summit for the sewage to reach the Joint Trunk Sewer at the Summit line. It takes just one hour to travel the 7,900 feet between the first gauge, designated as gauge No. 6-53, and the second gauge, designated as gauge No. 6-24. It requires three hours to travel from gauge No. 24 to gauge No. 60, a distance of 36,000 feet. The velocity in the sewer from the Summit line to

gauge No. 24 is 130 feet per minute, and from gauge No. 24 to the gauge on the first section is 200 feet per minute. This record shows that when Summit was not pumping it discharged through the balance of its system a uniform flow of 1,100,000 gallons per day. But during the periods of pumping it discharged at the rate of 2,450,000 gallons per day. As the pumping operations were continued through 8 1-2 hours per day, the total amount pumped during each day at Summit averaged 478,100 gallons; or 1,578,100 gallons in all from Summit.

"The records of the Venturi meter at the pumping station show during this period that the actual amount pumped averaged 463,100 gallons. This approximate agreement between the actual quantity pumped and the amount as recorded upon the gauge is quite satisfactory and as close as can be reasonably expected. With the aid of this large volume of water we will be able to secure much valuable data as to the actual capacity of the flow through each of the different sections of the sewer.

"*Roselle Park.*—We have had a continuous record of the flow of sewage from Roselle Park, and I find that during the last two months there has been over 1,200,000 gallons flowing through this section. Roselle Park has a capacity in the Joint Trunk Sewer of 375,000 gallons, and Union Township also has a capacity of 375,000 gallons. I have examined the contracts between these municipalities and Union Township states that the amount them because they were given permission to use this sewer with- of their discharge through this section is not to be taxed against out restrictions from Roselle Park for the privilege of right of way through Elmora. This is a somewhat serious matter and requires action on the part of the Joint Meeting. An examination of this sewer flow indicates that it is practically clear water running through the sewer, which shows that much of the flow can be eliminated. I have notified the members of the Roselle Park Commission to attend this meeting in order that this matter may be taken up by your Board.

"I present herewith the bill of E. H. DuVivier for one gauge which was ordered by the Board to replace the gauge which we disposed of to Roselle Park. The gauge disposed of to Roselle Park was one of two gauges which we purchased from Queen & Company. These two gauges purchased from Queen & Co. were defective and we returned them for rectification some three or four months ago. They have not yet been sent back. Our business relations with Queen & Company have been far from satisfactory. While the Board of Roselle Park stand ready to pay for the gauge, they do not feel justified in doing so until the gauge is turned over to them, when they will pay us what it cost us.

"Respectfully submitted,

"ALEXANDER POTTER."

The Inspector's report was read and ordered placed on file.

The Treasurer's report was read and ordered placed on file.

The Secretary was authorized to procure commission as Notary Public so that he might take the acknowledgments to vouchers upon payment of bills.

The Secretary stated that in the office in Irvington where the records of the Joint Meeting are kept in a desk belonging to former Secretary Tuttle, which contains many of the papers and records. Mr. Tuttle is willing to sell the desk for $20.00. The Secretary was authorized to purchase the desk at a cost not to exceed $20.00.

The Chairman appointed Messrs. Campbell and Frey to succeed Hopkins and Webb on the Auditing Committee.

The following bills were read and being properly audited, were directed to be paid. A vote taken by roll call resulted 5 ayes, no noes:

Alexander Potter	$ 83.34
Corey W. Sandford	50.00
F. R. Sandford	30.00
F. R. Sandford	100.00
Alexander Potter	83.33
Corey W. Sandford	50.00
F. R. Sandford	30.00
F. R. Sandford	100.00
The Summit Herald	12.00
N. Y. & N. J. Telephone Co.	5.55
Queen & Co.	7.70
Harold L. Bond Co.	58.30
Arthur Tepper, Sec'y, petty cash	58.14
Arthur Tepper	87.00
Alexander Potter	83.34
Corey W. Sandford	50.00
F. R. Sandford	100.00
F. R. Sandford	30.00
O. A. Dohm	2.00
Wm. C. Fiedler	6.00
Corey W. Sandford	11.75
F. R. Sandford	27.13
S. H. Rollinson	50.00

On motion the meeting adjourned.

ARTHUR TEPPER,
Secretary.

Joint Meeting of May 6, 1908.

A special meeting was held at the offices of Adrian Riker, Counsel, for the purpose of meeting representatives from Roselle Park and discussing the question of Roselle Park's excess of capacity in Joint Trunk Sewer.

The meeting was called to order at 4:30 P. M. by the Chairman.

Roll call. Present: Chairman Francis Speir, Jr., A. F. Eggers, Newark; W. T. Frey, Irvington, J. J. Kenney, West Orange; T. G. Conway, South Orange; W. Campbell, M. D., Millburn; O. B. Merrill, Summit.

Roselle Park was represented by Mayor Call, Messrs. Polhemus, Gordon and Lewis.

Moved and seconded that minutes of last meeting be approved as printed. So ordered.

The Chairman reported that pursuant to authority invested in him at meeting of March 26, 1908, to settle with Conrad Weppler for damages done to his grounds and spring by the Joint Trunk Sewer for a sum not to exceed $350, he has settled with Mr. Weppler for Three Hundred and Fifty Dollars, and secured a general release, which he forwarded to Mr. Adrian Riker, Counsel, for approval.

Counsel approved the release and turned same over to the Secretary.

A motion was made and duly seconded that Mr. Speir be reimbursed for the $350 which he paid to Mr. Weppler. Upon a vote being taken by roll call the motion was seconded. 5 ayes, no noes.

The Engineer reported that in answer to Roselle Park's questions as to amount of excess he has compiled the following schedule:

ROSELLE PARK, M. H. 14, 15-INCH PIPE.

1908 Week Ending	Max. Depth Average for 3 Hour Perlods. Ins.	Corresponding Flow if Cont'd for 24 Hours.	Max. Depth Average for 24 Hrs. Ins.	Corresponding Flow.	Average Depth for Week. Ins.	Corresponding Flow for 24 Hours.
Jan. 23	10.3	1,800,000	9.84	1,680,000	9.6	1,620,000
Jan. 31	10.56	1,855,000	9.36	1,560,000	8.4	1,320,000
Feb. 6	15.84	2,350,000	13.2	2,325,000	9.0	1,470,000
Feb. 13	9.0	1,470,000	8.4	1,320,000	8.16	1,260,000
Feb. 21	17.5	2,400,000	15.36	2,300,000	10.0	1,720,000
Feb. 28	16.2	2,380,000	13.8	2,355,000	10.0	1,720,000
Mar. 7	9.84	1,680,000	9.1	1,500,000	8.9	1,450,000
Mar. 12	12.0	2,160,000	10.8	1,910,000	8.4	1,320,000
Mar. 20	15.1	2,220,000	13.8	2,355,000	11.4	2,040,000
Mar. 27	10.8	1,915,000	10.0	1,720,000	9.6	1,620,000
Apr. 3	10.44	1,830,000	9.84	1,680,000	9.0	1,470,000
Apr. 7	9.72	1,650,000	9.1	1,500,000	8.9	1,450,000
Apr. 15	10.8	1,915,000	9.6	1,620,000	8.0	1,230,000
						19,690,000
Average gallons per day						1,514,615

which he sent to Counsel with the following letter:

"New York, April 22, 1903.

"Mr. Adrian Riker, 164 Market Street, Newark, N. J.:

"My Dear Mr. Riker:—I enclose herewith a record of the sewer flow in Roselle Park carried up to date. You will notice that there is practically no difference between the sewer flow for a considerable period of time. This data which I send you has been made out so as to show you the effect of a sudden storm as shown by the three hour periods of flow, the effect of the saturation of the soil and also the normal winter flow. These figures have been verified and are correct within five per cent.

"I have had a talk with Mr. Speir and he suggests that we have a meeting some afternoon of the Joint Body at your office, say about 3:30, which will enable the New York members of the Committee to get their work finished in the city and will also be convenient to the Roselle Park people. I shall communicate at once with Mr. Polhemus and find out whether he can get his Committee together in the afternoon and when. Until we find out whether an afternoon meeting will be convenient to the Roselle Park parties, I presume that we cannot definitely fix a time of meeting.

"Yours very truly,

"ALEXANDER POTTER."

The Engineer had at the meeting the gauge charts showing the above and other readings for the inspection of members of the Commission and the representatives of Roselle Park.

Counsel then addressed the meeting, stating that the purpose of the meeting was to adjust the question of Roselle Park's capacity. That the Engineer has submitted readings which

showed an average excess of 1,125,000 gallons per day, and that the Joint Meeting consider it only right that Roselle Park get within their capacity or pay for the excess, provided that the Joint Trunk Sewer has sufficient capacity to carry this excess.

The matter was then turned over to Engineer Potter and Mr. Polhemus. Mr. Polhemus stated that Roselle Park would be glad to lessen the flow, if possible, but do not see the way to do so. They are willing, however, to come to some agreement as to the excess flow, realizing that their quota is exceeded and that they should pay.

Counsel then asked what capacity Roselle Park will require for the next reasonable number of years.

Mr. Polhemus requested Mr. Potter, who acted as Consulting Engineer for Roselle Park during the construction of the sewers, to give his opinion of the additional capacity Roselle Park would require. Mr. Potter stated in this connection that the original allotment of Roselle Park was too small. It was based upon his prior experience in New Jersey, none of which covered ground similar to the ground encountered in this section. The records of other systems in the vicinity of Newark up to this time did not disclose the amount of leakage. In the case of Roselle Park the allotment was figured on a population of between 3,000 and 4,000 people, using 100 to 125 gallons per day per capita.

In Passaic, Montclair, Orange and East Orange the leakage amounts to 50,000 gallons per day per mile. On the Joint Trunk Sewer system the leakage varies, but will average about 25,000 gallons per day per mile. If the permissible leakage for Roselle Park was estimated at the rate of Passaic, Montclair, Orange and East Orange, it would for its 10 miles amount to 500,000 gallons; therefore, its total allotment of 375,000 gallons was altogether inadequate. Steps are being taken by Roselle Park to remedy the leakage. Changes have been made in street grading and also the leakage in certain laterals which have heretofore been in very poor shape have been stopped entirely. This will reduce the flow materially.

El Mora is responsible for much of the excess and there leaders are connected with the sewer.

El Mora is to be annexed to Elizabeth at an election to be held May 16, 1908, and as there is no contract with Elizabeth

regarding El Mora, their flow will be charged to Elizabeth's quota of 750,000 gallons. Therefore with El Mora discharging through Elizabeth, eliminating the rain water so far as is practicable, charging Union Township with their flow and with an additional capacity of 500,000 or 600,000 gallons, for which Roselle Park stands ready to pay, the matter should be adjusted satisfactorily.

The Engineer stated that Roselle Park's capacity can be increased 500,000 gallons, with safety to the other municipalities.

Counsel advised that as nothing definite can be done until after El Mora is annexed to Elizabeth, the matter lay over until the June meeting. A motion was made and seconded that Counsel's suggestion be accepted. Motion carried.

On motion the meeting adjourned.

ARTHUR TEPPER,
Secretary.

Joint Meeting of June 18, 1908.

ANNUAL MEETING.

Meeting called to order by Chairman Francis Speir, Jr.

Roll call. Present: West Orange, J. J. Kenney; Millburn, Dr. Wellington Campbell; Irvington, William T. Frey; Summit, O. B. Merrill; South Orange, T. G. Conway.

Moved and seconded that minutes of last meeting be approved as printed. So ordered.

The Engineer read the following report, which was received and ordered placed on the minutes:

"June 18, 1908.

"Joint Meeting,
"South Orange, N. J.:

"Gentlemen:—The matters of interest in connection with the Joint Trunk Sewer which have occupied the attention of your Engineer since the regular meeting of April 4 has been an attempt to determine the cause of the high flow in the sewers during high storm periods and also during periods of seasonal rains. From this investigation I am satisfied that a great deal of the present flow in the sewer comes from preventable leakage within the limits of the various municipalities, and I would

strongly urge that a request be made to each of the municipalities to make an investigation to determine the cause of this excess flow.

"In several instances we have been able to locate it, notably in West Orange, and they are providing means for its remedy.

"There has just been completed in the Township of South Orange about nine miles of sewers under the terms of agreement between the Township of South Orange and the Village of South Orange and the Township of Millburn. On account of the limited capacity which South Orange Township was able to secure in the Joint Trunk Sewer, the specifications for the construction of these nine miles of sewers were extremely rigid, and the inspection and supervision of the highest order, with the result that the leakage is almost negligible. This result could only have been brought about by the methods adopted, which it is safe to say have been adopted on no other sewer construction work in the country. It is true that these methods cost the Township some fifteen per cent. more than the price at which sewers are let in this neighborhood, but as it will enable them to build twice as many miles of mains as otherwise, it has paid them to do so. I make reference to South Orange in this report because there is a certain amount of sewer extension work going on in each one of the municipalities connected with the Joint Trunk Sewer, and I would suggest that the specifications under which these sewers are to be constructed be modified so as to secure the character of work which has been secured in South Orange Township.

"The sewer leakage is more prevalent and is very much more extensive than is normally considered, and its elimination from sewers is of vast importance in municipalities where they have long outlets to maintain, or where they have sewage disposal plants to maintain. In South Orange Township we have eliminated altogether the use of tile pipe for house connections, and have adopted cast iron pipe construction from the sewer to the house. We have also eliminated the use of superfluous T and Y branches, only putting in sufficient branches to care for the houses already constructed. It is easy to make an opening in a vitrified pipe provided it is carefully done, and as the restrictions under which all additional sewers should be constructed require the personal supervision of a careful, conscientious man, there is no difficulty or danger in permitting the tapping of pipes just where they are needed. Much of the leakage in sewer pipes is occasioned by the leakage in the T's which cannot be gotten at, and if the T's and Y's are eliminated the leakage is reduced just so much and the expense of constructing the sewer is also reduced.

"The importance of this matter cannot be overestimated, as many of the municipalities have already used up over fifty per

cent. of their capacity. In the Vailsburg section of Newark and also that portion of South Orange which drains into the Vailsburg section, they are using seventy-five per cent. of their capacity normally, and at times of storm they are exceeding their capacity, in the case of South Orange thirty per cent. and in the case of Vailsburg about fifteen per cent.—that is, during the period from January to May, 1908, which is the period of high flow in the sewer.

"I am continuing my investigation as to the actual acpacity of the Joint Trunk Sewer, determined by the influence of the known discharge received during certain hours of the day from Summit's pumping station.

"I have nothing new to report concerning Roselle Park further than the fact that El Mora, a portion of Union Township, has recently been taken into the City of Elizabeth, and this further complicates the situation in so far as Roselle Park's rights are concerned. Roselle Park is making efforts to have this matter straightened out so that they will know how much they will require to secure from the Joint Trunk Sewer in the way of excess capacity.

"I beg to state that Inspector Sandford during the past year has been a faithful employee of the Sewerage Commission, and has at all times stood ready to carry out the requests of your Engineer, and has always been ready to accompany the Engineer or his assistants in special investigations, and to carry out the orders and instructions of the Engineer in reference to improvements in the sewer system.

"During the year many of the municipalities have added considerable mileage to their system, and Summit, as stated in the last report, has for some time been discharging its entire sewage flow into the Joint Trunk Sewer.

"Millburn has built several miles of sewer in all during the past year and has in contemplation the construction of several additional miles through property which is being developed. West Orange during the year has built about two miles of sewers in all.

"Many of the gauges which were purchased five years ago for keeping a continuous record of the sewer flow are considerably out of repair, and during the year it will be necessary to replace one or two of these gauges by new ones of a different type. The French gauge purchased from E. H. Du Vivier is doing good work. It is impossible to get back from Queen & Company two gauges which were sent to them for repairs some six months ago.

"I desire to call the attention of the Joint Meeting to the advertisement which is now running in the papers to the effect

that Elizabeth is to build a pumping station and sewer which connects with our sewer in Bayway, and to request instructions as to what supervision we should demand in connection with its construction.

"Respectfully submitted,

"ALEXANDER POTTER."

Moved and seconded that the recommendations of the Engineer be taken up separately. So ordered.

Specifications for and Supervision of New Sewer Construction and Suggestion to Substitute Cast Iron Pipe for Tile Pipe in House Connections.

Motion made and seconded that the Engineer be requested to communicate with the various municipalities recommending the use of cast iron pipe in house connections—also the exercise of such care in the general construction of sewers as shall prevent leakage as far as practicable. So ordered.

Superfluous T's and Y's.

Motion made and seconded that the Engineer be requested to communicate with the various municipalities, recommending that municipalities shall reserve to themselves the right to make the tap and put in the connections to the property line. So ordered.

Proposed Elizabeth Pumping Station and Sewer.

Motion made and seconded that the matter be referred to Counsel and that Counsel look into the question of the rights of Elizabeth to connect sewer with our junction which was provided at Bayway, and to take such action as shall be necessary. So ordered.

The Treasurer's report was read and ordered placed on file.

Motion made and seconded that the accounts of the Treasurer and Secretary be referred to the auditing committee for examination. So ordered.

The Inspector's report was read and ordered placed on file.

A motion was made and duly seconded that Corey W. Sandford be appointed Assistant Inspector at a salary of $75.00 per month, commencing July 1, 1908. Motion carried.

Mr. Martin P. O'Connor, acting as counsel for the Borough of Roselle Park, attended the meeting to learn what he could of

the question of capacity rights, etc., of Roselle Park so that he might make a report at the next meeting of the Board.

The Chairman outlined the situation and ordered the Secretary to mail Mr. O'Connor a copy of the minutes of the special meeting held May 6, 1908. For further information Mr. O'Connor was referred to Mr. Adrian Riker, Counsel.

The following resolution was then offered:

"Resolved, That the several municipalities do raise and pay to the Treasurer of the Joint Meeting the sum of $2,800, which shall be assessed upon the joint municipalities in the proportion fixed by the contract between the several municipalities, providing for the care and maintenance of the Joint Sewer, i. e., each municipality paying an equal amount, or one-seventh of such assessment (excepting City of Newark, which shall pay two-sevenths, one-seventh for Newark and one-seventh for Vailsburg); and further that the Secretary be directed to notify the several municipalities of such assessment and the amount to be paid by each; and further,

"Resolved, That the said moneys be paid to the Treasurer within twenty days from the 18th day of June, 1908."

A vote being taken by roll call resulted, 5 ayes, no noes. Resolution declared adopted.

A motion was made and seconded that the Auditing Committee furnish a budget for the benefit of the various municipalities, and that Secretary be instructed to send a copy to each municipality. So ordered.

A motion was made and seconded that the Committee go into election of officers for the ensuing year. Carried.

The following officers were then chosen for the year:

Chairman—Francis Speir, Jr.
Engineer—Alexander Potter.
Treasurer—Simeon H. Rollinson.
Secretary—Arthur Tepper.
Counsel—Adrian Riker.
Chief Inspector—F. Ross Sandford,

at the same compensation as that of last year.

The Engineer brought up the matter of gauges which were sent to Queen & Co., November 10th, 1907, for repairs and which Queen & Co. have failed to return. Engineer requests that Counsel take action. So ordered.

The following bills were audited and upon a vote being taken by roll call were ordered paid, 5 ayes, no noes:

Corey W. Sandford	$ 50.00
F. R. Sandford	30.00
F. R. Sandford	100.00
Alexander Potter	83.33
Corey W. Sandford	50.00
F. R. Sandford	30.00
F. R. Sandford	100.00
Alexander Potter	83.33
Summit Herald	21.00
E. H. DuVivier	54.00
H. B. Halsey Co.	29.79
Fire and Water Engineering	2.35
O. A. Dohm	10.25
Macknet and Doremus Co.	6.30
Marshall and Ball	18.00
F. R. Sandford, sundries	13.66
C. W. Sandford, sundries	3.25
Adrian Riker	275.00
S. H. Rollinson	50.00
Arthur Tepper	87.00
Secretary, petty cash	185.00
T. G. Conway	10.00
W. Campbell	15.00
O. B. Merrill	15.00
W. T. Frey	15.00
Francis Speir, Jr.	15.00
A. F. Eggers	5.00
W. T. Baird	5.00
J. J. Kenney	15.00
Alexander Potter	83.33
F. R. Sandford	100.00
F. R. Sandford	30.00
Corey W. Sandford	50.00

On motion the meeting adjourned.

ARTHUR TEPPER,
Secretary.

Joint Meeting of October 15, 1908.

In the absence of Mr. Speir, Mr. W. T. Frey was made Chairman and called the meeting to order.

Roll call. Present: W. T. Frey (Irvington), A. F. Eggers (Newark), J. J. Kenney (West Orange), T. G. Conway (South Orange), Dr. W. Campbell (Millburn) and O. B. Merrill (Summit).

Minutes of last meeting approved as printed.

The Engineer's report was read and ordered placed on the minutes:

"October 15, 1908.

"Joint Meeting, South Orange, New Jersey:

"Gentlemen:—The important matters which your Engineer has to report upon at the present time are, first, in regard to the additional sewerage facilities for the Borough of Roselle Park, and second, the condition of the sewers in Irvington. Other matters of less moment will be touched upon in a subsequent part of this report.

"In regard to the Roselle Park matter. I understand that at this meeting application will be made by Roselle Park for 500,000 gallons additional capacity, with the option of 500,000 gallons more. At the time of my last report, I found that Roselle Park had been exceeding its capacity, but on account of the dry season through which we are passing, the flow at the present time is below their quota; for instance, for the week ending September 18th the flow averaged 330,000 gallons; for the week ending September 25th, the flow averaged 250,000 gallons a day, and for the week ending October 1st, the flow averaged 250,000 gallons a day. This period of dry flow is of value in showing that the greatest percentage of the excess flow in the Roselle Park system is due to ground-water infiltration.

"The cost of that portion of the Joint Trunk Sewer from the outlet up to the point where the Roselle Park sewage is admitted was $171,000.00. The capacity of this sewer is, roughly speaking, 21,000,000 gallons, so that the cost per million gallons of sewage is about $8,000. Besides the initial cost of this sewer, the towns comprising the Joint Meeting have been paying a yearly interest charge of $8,000, or $950 for the total interest charges due from Roselle Park for the half million gallons which it now desires. In determining the cost to the Joint Meeting of providing half a million gallons to Roselle Park, we must further take into consideration the annual maintenance charges, no part of which the Roselle Park people have been called upon to pay.

The maintenance charges for the first section of the Joint Trunk Sewer have been approximately $500 a year. Of this amount $60 is a fair allowance for the additional cost of taking care of the Roselle Park sewage. Therefore in arriving at the cost, Roselle Park should either agree to pay this annual charge or the capitalized value of this annual charge, $1,500. Summarizing, therefore, we find that if Roselle Park is asked a fixed sum for 500,000 gallons a day, that the Joint Meeting must receive from them a cash payment of at least $6,500, in order to come out whole on the transaction. The question of what actually should be charged to Roselle Park is a matter between the Joint Meeting and Roselle Park, with which your Engineer has nothing to do.

For the past two or three years, Roselle Park, during from six to nine months of the year, has been using from 750,000 to 1,000,000 gallons in excess of their capacity. I understand that negotiations are pending between them and the City of Elizabeth, whereby they can secure relief which will obviate the necessity of their coming to the Joint Trunk Sewer for more than an additional capacity of 500,000 gallons per day.

"In coming to any agreement with Roselle Park, provision must be made in the agreement so that Roselle Park will pay its proportionate share of any system of sewage disposal which may be required in the future before discharging the crude sewage into the waters of Staten Island Sound.

"Taking up the discussion of the condition of the sewers through Irvington. I have made an examination of the Joint Trunk Sewer through Irvington with special reference to the complaint that odors are given off by the sewers, not only from the joint sewer but also from Irvington laterals.

"My first inquiry was directed to finding an answer to the question, 'Why are there more complaints about the sewers in Irvington than there are about the sewers in other nearby towns built under the same specifications? say, for instance, South Orange Village?' I had not far to go for an answer, for I find that the sewers are not being flushed. None of the flush tanks are working and the only flushing is done by a man supposed to go around once a week flushing by hand. As the same flushing device is used in South Orange Village as in Irvington, it cannot be charged that the syphons cannot be made to work. It is quite true that with the inlet pipe fixed to fill the tank once a day the flow is so small that the syphons may not work, but it is better to increase the stream so that they will discharge twice daily than that they remain absolutely of no value. This condition brought about by non-flushing is responsible largely for the odor in the sewers.

"I find according to the present plumbing ordinance that each householder is required to insert a trap near the cellar wall. If these are effective they must keep the gas in the sewers until it

gets force enough to break the seal on the house trap. The necessity of excluding surface water from the manholes requires the use of tight covers. There is therefore no escape for the sewer gas as it is generated, and it accumulates in the sewer until it forces traps or travels along the sewer until it finds some opening in a manhole cover, when a foul smelling odor is given off. Either condition is equally objectionable.

"Sewer gas freshly generated is harmless and does not smell. If it can at once be dissipated in the air, it annoys no one. This is accomplished by omitting the main trap on the house plumbing and carrying the main soil pipe well above the roof, and thus using it as a ventilating shaft. This is considered the very best method not only of house plumbing but of sewer ventilation. It so simplifies plumbing that plumbing costs are considerably reduced.

"I would recommend that the sewers be flushed daily as was expected when the design was made, and that Irvington cut out all traps on the main house sewers. It can have no relief from existing conditions until it does.

"I beg to call the attention of the Joint Meeting to the physical conditions in the vicinity of the car barn pits at 16th Avenue and 20th Street, Newark, and ask instructions in regard thereto. The car barn pits are connected legitimately to our sewer and we can offer no objection to their draining into our sewer the water used for washing the cars over these pits. The location of the car barn is such that during a heavy rain storm the street water enters these pits in large volume, and passes from the pits into our sewers. In order to prevent the street water from finding its way into the car barn pits, it will be necessary to raise the grade of the street at this point. Whether the Joint Meeting has a right to interfere in this matter, your Engineer does not know, but as during a rain storm much water passes into the pits and thence down the sewer through Augusta Street, some action should be taken looking to an amelioration of the conditions caused by this unnecessary heavy flow during storm periods.

"I beg to call your attention to the fact that the Diamond Mills in the Town of Millburn has within the last few days again started operations, and note that during the time that this mill has been shut down, the Joint Trunk Sewer Inspector has had less work in removing from all portions of the sewer much stringy matter which had its origin in this mill. As this material passed from the mill it was in such a finely divided condition as to make it almost impossible to intercept, but we should require that the Diamond Mills insert better screening facilities on their property before passing this stringy material into the sewers. We have also found a tendency on the part of other manufacturing establishments along the line of the sewer to be careless as to

their screening apparatus. This is notably the case with the Maybaum Slaughter House and also the Fandango Mills.

"The attention of your Engineer was called to the fact that the lessee of the Whittingham property has made a complaint about a colt having been killed by falling into an unfilled excavation made when the Joint Trunk Sewer was first built. When this sewer was constructed, I took up with the various property owners the condition of the ditches through their lands, and the manner in which the trenches were left on the Whittingham property were satisfactory to the then owner. It was suggested that, in order to avoid further accidents, we slope off the ditch to a grade that would prevent similar accidents in the future, but this I have refused to do, fearing that such action might tend to place the responsibility of the loss of the horse upon the Joint Body. In view of the accident, I think that as a matter of policy, it might be well to do this just as soon as some conclusion is reached as to whether the Joint Meeting is to be asked to stand responsible for the killing of the horse.

"Respectfully submitted,

"ALEXANDER POTTER."

Moved that subject be taken up seriatim. So ordered.

Re Roselle Park.—Counsel Adrian Riker reported that he had notified Mr. Martin P. O'Connor of Roselle Park, of this meeting, and suggested that Roselle Park send representatives.

Mr. Riker advised the appointment of a committee to meet Roselle Park committee in this matter.

The question of the expediency of selling a 500,000 gallon right to Roselle Park with option on an additional 500,000 was raised, and Mr. Potter said that in his opinion it was a perfectly safe procedure; that in fact Roselle Park at present, with rain water and sewage, used as high as 750,000 gallons frequently.

The question of price was then brought up, and it was decided that $7,500.00 for the 500,000 gallons would be a fair charge, Roselle Park to agree to pay their share of the cost of any treatment which may hereafter be required on this section of the sewer.

Regarding the option on 500,000 gallons additional, the same price would be asked, provided it be accepted within one year, plus interest from present date to date of acceptance.

A motion was made and duly seconded that a committee of three be appointed to meet Roselle Park committee in the matter of the purchase by Roselle Park of 500,000 gallons capacity in the

Joint Trunk Sewer, and an option on an additional 500,000 gallons. Motion carried.

The Chairman appointed the following to serve on this committee: Dr. Wellington Campbell, chairman; A. F. Eggers and J. J. Kenney.

The Secretary was directed to notify Roselle Park of the appointment of this committee.

Re Irvington Matter.—After some discussion about the bad odors reported in the neighborhood of Lincoln Place and Augusta Street between Mr. Frey and Mr. Potter, it was decided to appoint a committee to investigate the cause and to suggest remedy, the committee to consist of Engineer Potter of the Joint Meeting; Engineer E. S. Rankin, of Department of Sewers and Drainage, Newark, and Engineer E. R. Halsey, of Irvington.

Re Whittingham Horse.—Mr. Riker advised that the Joint Meeting have slope remedied to prevent future accidents.

A motion was made and seconded that this work be done at once at a cost not to exceed $25.00, provided this is accepted by the owner of land as a satisfactory disposition. So ordered.

The Treasurer's report was read, accepted and ordered placed on file.

The Inspector's report was read, accepted and ordered placed on file.

The following bills were audited, and upon a vote being taken, were ordered paid. Four ayes, no noes:

Alexander Potter (July)	$ 83.33
F. R. Sandford (July)	100.00
F. R. Sandford (July)	30.00
C. W. Sandford (July)	75.00
Alexander Potter (August)	83.33
F. R. Sandford (August)	100.00
F. R. Sandford (August)	30.00
C. W. Sandford (August)	75.00
Alexander Potter (Sept.)	83.34
F. R. Sandford (Sept.)	100.00
F. R. Sandford (Sept.)	30.00
C. W. Sandford (Sept.)	75.00
Alexander Potter (Oct.)	83.34
F. R. Sandford (Oct.)	100.00
F. R. Sandford (Oct.)	30.00
C. W. Sandford (Oct.)	75.00

Summit Herald	12.00
H. S. Fish	3.75
A. C. Courter & Co.	10.04
Thos. A. Sandford Co.	9.55
Macknet & Doremus Co.	5.40
Coffin Valve Co.	45.00
O. A. Dohm	8.50
Jackson Awning Co.	73.00
N. Y. & N. J. Telephone Co.	30.30
S. H. Rollinson	20.00
S. H. Rollinson	50.00
Arthur Tepper	87.00
Arthur Tepper, petty cash	170.58

On motion the meeting adjourned.

ARTHUR TEPPER,
Secretary.

Joint Meeting of December 17, 1908.

Meeting called to order by Francis Speir, Jr., Chairman.

Present: A. F. Eggers (Newark), W. T. Frey (Irvington), J. J. Kenney (West Orange), W. Campbell, M. D. (Millburn), O. B. Merrill (Summit).

Motion made that the minutes of last meeting be adopted as printed. So ordered.

Engineer's report approved and ordered placed on file.

The Engineer read the following report, which on motion was accepted and ordered incorporated in the minutes.

Report of Engineering Committee to Investigate the Conditions on Augusta Street and Lincoln Place, Irvington.

"To the Joint Meeting:

"Gentlemen:—In accordance with the resolution of your Board, we beg to report upon the condition of Augusta Street and Lincoln Place and to make certain recommendations which, in our judgment, will relieve the situation.

"*The Augusta Street Sewer.*—There are two matters in connection with the Augusta Street sewer which have received attention at our hands; first, the question of the surcharging of the existing sewer and the means of remedying same. We find that the present sewer is large enough for all the present requirements, and all probable future requirements, so far as the

house sewage itself is concerned; but because the sewers tributary to the Augusta Street sewer pass through a territory surcharged for the most part of the year with ground water, the sewer is not of sufficient size to take care of all the water that reaches the sewer during and after a heavy rain storm. The City of Newark is expecting during the coming year to construct a storm water sewer in the Vailsburg district. This will drain the pond at Fifteenth Avenue and South Twentieth Street, which has at times overflowed into this branch of the Joint Outlet Sewer. With this trouble eliminated and the gradual silting up of the joints throughout the system, it is believed that there will never be any more water to be carried through the Augusta Street sewer than there is at present. In other words the maximum has probably been reached. As the sewer in Augusta Street, however, is constructed so near the surface, we are of the opinion that an additional sewer should be placed in this street at such a depth that it will afford sewage facilities to all houses that may subsequently be built upon this street.

"We would recommend that the connections to the present sewers between Lyons Avenue and Cottage Street be disconnected from the existing sewer and connected to the deeper sewer.

"From the data in Mr. Potter's office, we find that the greatest amount of water passing down this street has been about forty per cent. in excess of the carrying capacity of the sewer when running full. We are therefore of the opinion that a second sewer constructed as above suggested, with a capacity equal to the present sewer, will answer all requirements of the case. The present sewer on this street is 12 inches in diameter. A 15-inch sewer built upon a grade of .3 of a foot in 100 feet will create a capacity of double the present carrying capacity of the single 12-inch pipe, and we would recommend its construction.

"*Odors on Lincoln Place and Augusta Street.*—The matter of the odors on Augusta Street and Lincoln Place has also been considered by us. In the attempt to exclude the ground water from this section, the manholes on the Joint Trunk Sewer and throughout Irvington have been plugged up so that the gas generated throughout the sewerage system had to find some other way of escape than through the manhole covers. The plumbing law of Irvington is copied largely from the Newark plumbing ordinance, which provides for intercepting traps on all house sewerage connections. With these traps working properly and with the manholes closed to prevent the escape of air into the streets, there is only one logical sequence, and that is, that the foul sewer air makes itself felt more pointedly wherever there happens to be an open manhole cover or other access to the air. There is only one remedy for this condition, and that is that the intercepting traps be cut out. This is in accordance with the best sanitary regulations and is the system used in East Orange and several other

neighboring towns. Years ago these traps were considered an absolute necessity on all sewerage systems, but at the present time, in the majority of modern sewerage systems they are omitted altogether and dependence placed upon the individual traps on the fixtures. With the intercepting trap omitted from the main house connections, contrary to what might be expected, there is less responsibility in not having the individual traps perfect than before, for the reason that, with the intercepting traps omitted, the sewer gas as it is first generated in the mains finds an immediate exit through the ventilating pipes to the roof and is not present in volume nor strength to the same extent as where it is confined back of the trap until it gains sufficient strength to force the trap, where there is a greater chance of its forcing the individual traps as well. The presence of these house traps has been repeatedly shown to be a source of possible danger where sanitary inspection has been inefficient, for the ventilating pipe in such a system is carried up from the house lateral and is terminated a few feet above the ground, so that the gas from the sewer passes up in front of the house, causing noxious odors in the vicinity of such a ventilator. We would therefore recommend that the system of intercepting traps be dispensed with in all the towns connected with this Joint Trunk Sewer where such action has not already been taken.

"Respectfully submitted,

"Alexander Potter,
"Edward S. Rankin,
"Edmund R. Halsey."

Mr. Eggers then submitted the following resolution, which was unanimously adopted:

"Whereas, Complaints have been lodged with the Joint Meeting about odors emanating from the sewers, and whereas an engineering commission, composed of Alexander Potter, E. S. Rankin and E. R. Halsey, appointed by the Joint Meeting to investigate the causes of these odors, has recommended the removal of all intercepting traps on the main house laterals as the most efficient method of dealing with the sewer air problem;

"Therefore, be it Resolved, That a copy of the Engineers' report be sent to the members of all the governing bodies of the municipalities interested in the Joint Trunk Sewer with the request that their plumbing laws be amended in accordance with the engineers' recommendation.

"Be it further Resolved, That the various municipalities be asked to take the necessary steps to have all existing traps both on the lateral sewers and on the joint sewers passing through the respective towns removed.

"Be it further Resolved, That no permit be granted by this body for a sewer connection without a stipulation that the house trap be omitted."

The report of the Inspector was read and ordered placed on file.

The Secretary then submitted balance sheet and report for fiscal year ending July 1, 1908, as follows:

BALANCE SHEET.

July 1st, 1908.

Folio.			
1.	Cash Acct.	$2,793.67	
5.	Petty Cash	100.00	
13.	Maintenance		$2,649.19
51.	Interest		154.15
61.	J. P. Hall		100.00
63.	Earle & Dougherty		91.40
67.	Harrison Const. Co.		.10
69.	Over-assessment		24.58
71.	Rights of Way	125.75	
		$3,019.42	$3,019.42

Receipts.

Balance July 1, 1907	$4,084.91	
Assessments for Mtce.	4,900.00	
Christianson Tap	25.00	
City of Newark (2 manhole covers)	26.50	
Interest on balance, Or. Nat. Bank	13.38	
		$9,049.79

Disbursements.

Inspector's salary	$1,200.00	
Asst. Inspector's salary	600.00	
Engineer's salary	1,000.00	
Secretary's salary	300.00	
Treasurer's salary	200.00	
Secretary's office rent	48.00	
Inspector's horse hire (10 mos.)	300.00	
Counsel retainer	275.00	
Executive Committee	260.00	
Petty cash acct. (labor, etc.)	1,508.55	
Harr. Con. Co., bal. Lyons Ave. Ext'n.	89.57	
	$5,781.12	
Last year's salaries paid this year	475.00	
Balance July 1st, 1908	2,793.67	
		$9,049.79

The Auditing Committee reported that at a meeting held October 23, 1908, the accounts and books of Secretary and Treasurer had been examined and found correct.

The Auditing Committee made the following recommendation, which was concurred in by the Board and ordered placed on the minutes:

"West Orange, N. J., Oct. 23, 1908.

"To the Joint Meeting, Etc.:

"Gentlemen:—The undersigned, composing your Auditing Committee, hereby recommend that the sum of $6,100.00 be raised during the ensuing year to meet the expenses of maintenance.

"This amount is arrived at as follows:

Engineer's salary	$1,000.00
Inspector's salary	1,200.00
Assistant Inspector's salary	900.00
Secretary's salary	300.00
Treasurer's salary	200.00
Counsel's retainer	250.00
Executive Committee	300.00
Horse hire and office rent	450.00
Repairs, labor etc.	1,500.00
	$6,100.00

"One-seventh of this would be $871.50, which would be the assessment for the year on each municipality—$218.00 per quarter.

"Your respectfully,

"John J. Kenney,
"W. Campbell,
"Warren T. Frey,
"Auditing Committee."

The Clerk was directed to send a copy to each municipality.

A motion was made by Mr. Frey that the balance shown in Interest Account be transferred to Maintenance Account. So ordered.

Dr. Campbell reported for the committee appointed to meet Roselle Park representatives that he and Mr. Kenney had met with three of the Roselle Park representatives and submitted to them the resolution passed at our last meeting. This resolution was discussed and the matter was left until after the meeting of Roselle Park's board.

The following is the proposition made by Roselle Park:

"December 14th, 1908.

"Dr. Wellington Campbell, Short Hills, N. J.:

"Dear Sir:—The terms of the Joint Association for the sale to Roselle Park of additional sewer capacity were submitted to our Borough Council on December 4th. The Council has since conferred with the Borough Engineer on the subject and, at an adjourned regular meeting of the Council, held December 12th, our Engineer made a report thereon, a copy of which I beg leave to enclose herewith.

"The Council of Roselle Park is pleased at the fair way in which this matter is being considered by the Joint Body and by the committee of the Joint Body, of which you are Chairman. Relying upon that fairness the Council respectfully requests you to reconsider your offer. This is requested on account of the apparent disparity existing between the reasonable cost of the sewer privileges now asked for and the price paid by the Borough five years ago. I trust that the Joint Association and the Borough may be able to enter into a contract by the terms of which, according to the suggestions of our Engineer, the Borough will receive for $5,000.00 an additional 500,000 gallons capacity per diem plus an additional 125,000 gallons per diem (the shortage in the 1903 contract), or a total of 625,000 gallons per diem—and an option for one year for an additional amount of 500,000 gallons for a payment of $6,000.00.

"Should your committee desire the Sewer Committee of Council to appear before your committee or before the Joint Body, to discuss this matter, kindly advise me.

"Yours respectfully,

"Louis V. Ebert."

"December 12th, 1908.

"To the Mayor and Council of the Borough of Roselle Park:

"Gentlemen:—Pursuant to your request, I have considered the offer of the joint municipalities to sell the Borough additional sewer capacity of 500,000 gallons now for $7,500.00 and an option on a like amount for one year at the same figure plus interest, together with the report of Engineer Potter setting forth the basis of the charge. This charge of $7,500.00 for a half million gallons, as we learn from the above report and from statements of the committee with whom a conference was had, is made up of the following items:

1.	Construction cost (pro rata of total cost)	$4,000.00
2.	Interest (from time of construction to date)	1,000.00
3.	Maintenance ($60.00 per year, capitalized at 4%)..	1,500.00
4.	Profit	1,000.00
	Total	$7,500.00

"Items 1 and 2 represent the actual cost of providing this additional capacity on the basis of actual total cost of construction and the interest charges incurred to the present time. Of the fairness of these items there can be no question.

"Item 4 represents profit, and I do not think that any valid argument can be brought against the right of the Joint Meeting to charge a reasonable profit on something which they may have to sell.

"In regard to item 3, Maintenance, I understand that it is immaterial to the Joint Meeting whether this is paid as an annual charge, or the capitalized value of the same paid at once. I would therefore recommend that arrangements be made to pay what maintenance charge may be agreed upon annually instead of as a part of the lump sum payment which we are considering. Deducting then item 3 from the total, we have $6,000.00 as representing the reasonable value of 500,000 gallons daily capacity at the present time, exclusive of maintenance, and this would seem to be a fair charge.

"The existing contract between the Joint Meeting and Roselle Park gives to Roselle Park sewerage rights of 375,000 gallons daily for a payment of $7,500.00. This contract and payment were made, I believe, in 1903, at about the time of completion of the joint sewer. The amount paid is much in excess of the rate proposed to be charged at this time for similar privileges. I believe that the fact should be taken into consideration in entering into a contract with the Joint Meeting, and arrangements made so that the rates of payment shall be equalized. I have endeavored to make such an adjustment, considering 500,000 gallons daily as the unit.

"The price asked for this amount at the present time is $6,000.00, exclusive of maintenance, or, in 1903, as the interest charge had not then been incurred, $5,000.00 would have been the equivalent charge. The Borough paid $7,500.00, or $2,500.00 in excess of this amount. Assuming that $1,500.00, or the capitalized value of $60.00 per year for maintenance was included, there would still be a difference of $1,000.00 in favor of this Borough. As the quota conveyed was 375,000 gallons, instead of the 500,000 gallons considered, a credit of 125,000 gallons would, in this view of the case, be due the Borough.

"I would suggest, therefore, that in view of the above facts, which I think are fairly stated, and in justice to Roselle Park, they should be presented to the Joint Meeting for their consideration, and an endeavor made to have a contract drawn along the following lines:

"Payment to be made at this time of $5,000.00, same to be the $6,000 admitted as the value of the 500,000 gallons, less the $1,000.00 excess charge in 1903. The Borough to receive

in consideration sewerage rights of 500,000 gallons daily plus 125,000 gallons shortage in the 1903 contract, making a total of 625,000 gallons.

"Option to be taken for one year for an additional amount of 500,000 gallons for a payment of $6,000.00 in accordance with the original proposal.

"As to maintenance, as set forth, the payment in 1903 includes a capitalized maintenance charge of $60.00 per year. As this charge bears no direct relation to the amount of discharge, it does not seem that this amount should be materially increased for the additional capacity required.

"Respectfully submitted,

"J. Wallace Higgins,

"Borough Engineer."

The committee recommended that Roselle Park's offer be rejected and that no other offer be considered except the original proposition, and that interest be added to that from present time to time of acceptance.

The Board unanimously adopted the recommendation of the committee and the Clerk was directed to notify Roselle Park of this action.

The following bills were audited, and upon a vote being taken were ordered paid. Four ayes, no noes:

Alexander Potter (November salary)	$ 83.33
F. R. Sandford (November salary and horse hire)	130.00
C. W. Sandford (November salary)	75.00
F. R. Sandford (December salary and horse hire)	130.00
C. W. Sandford (December salary)	75.00
Alexander Potter (December salary)	83.33
Summit Herald	12.00
N. Y. & N. J. Telephone Co.	3.75
Edward S. Rankin	25.00
E. R. Halsey	25.00
S. H. Rollinson	50.00
Arthur Tepper	87.00
Secretary (petty cash)	103.54
F. R. Sandford (expense acct.)	6.60
Francis Speir	5.00
T. G. Conway	5.00
John J. Kenney	20.00
W. Campbell	20.00

O. B. Merrill	10.00
Warren T. Frey	15.00
A. F. Eggers	10.00

On motion the meeting adjourned.

ARTHUR TEPPER,
Secretary.

Joint Meeting of January 28, 1909.

SPECIAL MEETING.

Meeting called to order by Francis Speir, Jr., Chairman.

Present: A. R. Denman, Newark; Aug. L. Lacombe, Irvington; L. V. Blanchet, South Orange; Max Brodesser, West Orange; E. L. Smithers, Millburn, and O. B. Merrill, Summit.

Motion made that the minutes of last meeting be adopted as printed. So ordered.

No report by Engineer.

Treasurer's report read, accepted and ordered placed on file.

Inspector's report read, accepted and ordered placed on file.

The Secretary read the following letters which had been sent out by him in accordance with instructions given at meeting of December 17, 1908:

"Millburn, N. J., Dec. 19, 1908.

"To the Mayor and Council of the Borough of Roselle Park:

"Gentlemen:—

"At a meeting of the Joint Meeting held in South Orange, December 17, 1908, after receiving communication from Mr. Louis V. Ebert to Dr. Wellington Campbell, Chairman of the Committee appointed to confer with Roselle Park on the subject of additional capacity, and Engineer Higgins' report on same, the following recommendation was made:

" 'Recommended, That Roselle Park's offer be rejected and that no other offer be considered except the original proposition, and that interest be added to that from the present time to time of acceptance.'

"The Board unanimously adopted the recommendation and the Clerk was directed to notify Roselle Park of this action.

"Yours respectfully,

"ARTHUR TEPPER,
"Secretary."

"Millburn, N. J., Jan. 11, 1909.

"Mr. Milton R. Silance,

"Township Clerk, Millburn, N. J.:

"Dear Sir:—

"Enclosed please find a copy of a report by a committee of Engineers regarding the advisability of abolishing the house-traps on all connections with the Joint Trunk Sewer and its laterals.

"Will you please call the attention of your Board to the recommendation and ask that some action be taken?

"Under separate cover, I am sending copies of this report, also copies of the minutes of the last meeting. Will you please give each member of the Board two copies of the report?

"Yours truly,

"ARTHUR TEPPER,
"Secretary."

January 14, 1909:—Same sent to

William E. Greathead, Clerk, Newark.

M. Stockman, Clerk, Irvington.

Joseph McDonough, Clerk, West Orange.

M. A. Fitzsimmons, Clerk, South Orange.

Dr. J. E. Rowe, Clerk, Summit.

The following resolution was then offered and seconded:

"Resolved, That the several municipalities do raise and pay to the Treasurer of the Joint Meeting the sum of $3,050.00 (being the 4th assessment for year 1908, and 1st for 1909), which shall be assessed upon the Joint Municipalities in the proportion fixed by the contract between the several municipalities, providing for the care and maintenance of the Joint Sewer, i. e., each municipality paying an equal amount or one-seventh of such assessment (excepting the City of Newark, which shall pay two-sevenths, one-seventh for Newark and one-seventh for Vailsburg); and further that the Secretary be directed to notify the several municipalities of such assessment and the amount to be paid by each; and further,

"Resolved, That said moneys be paid to the Treasurer within twenty days from the 28th day of January, 1909."

A vote being taken by roll call, the above resolution was passed, 6 ayes no noes.

The Secretary reported that the warrant book was nearly used up. He was directed to purchase another from the manu-

facturers of the present one (M. Plum & Co.), the only change necessary being that in Treasurer's name.

A vote being taken by roll call, the motion to purchase a new warrant book was adopted, 6 ayes and no noes.

The following bills were audited and upon a vote by roll call were directed to be paid, 6 ayes, no noes,

Alexander Potter, January salary	$ 83.34
F. Ross Sandford, January salary	130.00
C. W. Sandford, January salary	75.00
S. H. Rollinson, ...	20.00
Summit Herald, printing minutes	20.00
N. Y. & N. J. Telephone Co.	8.50

On motion the meeting adjourned.

ARTHUR TEPPER,
Secretary.

Joint Meeting of April 1, 1909.

Meeting called to order by Francis Speir, Jr., Chairman.

Present: A. R. Denman, Newark; A. Lacombe, Irvington; M. Brodesser, West Orange; T. V. B. Blanchet, South Orange; E. L. Smithers, Millburn; O. B. Merrill, Summit.

Motion made that the minutes of last meeting be adopted as printed. So ordered.

The Engineer read the following report, which on motion was accepted and ordered incorporated in the minutes:

"To the Joint Meeting:

"Gentlemen:—When the Joint Trunk Sewer was first constructed, the right of way across the property of John W. Stiles was secured on the understanding that we should not interfere with the flow of a small stream crossing his property. This provision necessitated placing the level of the top of the sewer as it passed under the stream at no higher elevation than the bottom of the stream. To have depressed the sewer its full depth to comply with this condition would have meant the construction of a syphon under the stream or the lowering of the sewer two feet for the distance of a mile. Both of these contingencies could be obviated by maintaining uniform flow line under the stream, but flattening out the upper portion of the sewer as it crossed under the stream. This flattening was ac-

complished by laying three 24-inch pipes in place of the full section of one 42-inch brick sewer, with a saving of two feet in the elevation of the top of pipe. This construction was adopted. The distance between the ends of the pipe and the regular sewer section on either end was built in a funnel-shaped section.

"Since this sewer has been constructed, considerable difficulty has been encountered with stoppage across the mouth of the three 24-inch pipes, due to sticks, timber, rope, wire and other material which has found access to the sewer. These stoppages have occurred so frequently as to warrant your Engineer in recommending the abandonment of the cast iron pipes.

"Since the construction of this sewer, Mr. Stiles has built a dam across the iron pipes and ponded the water to a depth of a foot and a half above the tops of the pipes. In other words, if the sewer was carried through in its full section, there would be no greater obstruction or damage caused the property owner than he has himself occasioned by the construction of the dam on top of the pipes.

"I would therefore recommend that these three lines of 24-inch cast iron pipes be replaced by a single line of reinforced concrete sewer; 48 feet will be required and this can be constructed at an expense of $500.00. The matter of the rights of the Joint Trunk Sewer to make this change should be referred to Counsel, and if he decides that this construction interferes with the rights of the property owner, then, in the event of the property owner making unreasonable demands, the same class of construction as was used under the Pennsylvania Railroad on Bayway can be adopted at an expense of $650.00. If this plan is adopted, the iron pipes will be replaced by a sewer about 8 feet wide by 20 inches deep, which will give approximately the same cross-section as the regular section of 42-inch pipes. The plan first mentioned is preferable if in the judgment of Counsel it does not interfere with the rights of the property owner, in case he should object to its construction. The latter plan cannot be objected to by the property owner, but will cost $150.00 more to construct. The former plan is worth $150.00 more than the latter plan, therefore any amount less than $150.00 paid to the property owner will give the Joint Meeting the advantage of the best form of construction. I would recommend the adoption of the first mentioned plan with the provisions stated above.

"The plan takes into consideration the salvage of six lengths of 24-inch pipe. I estimate that these six lengths of pipe are worth $100.00, but to take care of the sewage during construction will add $100.00 to the estimate of the cost of the work.

"I desire to call your attention to the fact that the sewers in the Vailsburg section are giving us considerable trouble because so much rain water and ground water get into the sewer

during the spring floods. The cities of Newark and East Orange are contemplating the construction of a storm water sewer, which will somewhat relieve this situation, but until this is done no relief whatever can be afforded the property owners now affected by the flooding of our sewers.

"In this particular I desire to call the attention of the Joint Meeting to the fact that the construction of this sewer, while it will afford some relief, will not afford a full and sufficient relief, as it is the intention to discharge the storm drain at the north line of Irvington, and at the present level of the stream at that point. If this storm water sewer was extended through the Town of Irvington, the flow line of the storm sewer could be depressed five or six feet, and give better opportunity for the drainage of the low-lying ground and prevent the flooding of our present sanitary sewer. Just what authority or responsibility the Joint Meeting has in this matter, I do not know, and this suggestion is given for the benefit of those interested.

"In a conference with Mr. Riker to-day, he advised me that Roselle Park finds itself without authority to issue additional bonds to pay for the extra capacity in the Joint Trunk Sewer; that a bill has been prepared, submitted to him and meets his approval, which will in all probability become a law; and immediately upon its passage, Roselle Park will doubtless conclude negotiations for the purchase of additional space in the Joint Trunk Sewer at the terms stated by the Joint Meeting.

"Mr. Riker also advised me in regard to the Summit-Millburn claim against West Orange-South Orange, that the South Orange portion of this settlement has been paid and that Counsel for West Orange has advised him that warrants for the amount due from West Orange will be forthcoming within the next few days.

"Respectfully submitted,

"ALEXANDER POTTER."

Motion made and seconded that recommendations in Engineer's report be taken up seriatim. So ordered.

Regarding the Change in Construction on Stiles Property.— Resolved that the Engineer be authorized to take the necessary steps toward constructing the 42-inch reinforced concrete sewer, provided that Counsel approves the method and that the property owner gives the rights without compensation. Should compensation be demanded, the matter to be referred back to the Joint Meeting for further action. Motion carried.

Regarding the Newark and East Orange Storm Sewer.— Resolved that the matter be referred to the municipalities of

Irvington and Newark, which are the ones interested in the matter. Motion carried.

The Treasurer's report was read and ordered placed on file.

The Inspector's report was read and ordered placed on file.

Mr. Smithers, on behalf of Millburn, requested that the weir-gauge at the Diamond Mills be read and a certified copy of the reading be sent to Millburn Town Committee. On motion duly made and seconded this was ordered.

The following bills were audited and upon a vote being taken were ordered paid, 6 ayes, no noes:

Alexander Potter, Feb. salary	$ 83.33
F. R. Sandford, Feb. salary and horse hire	130.00
C. W. Sandford, Feb. salary	75.00
Alexander Potter, March salary	83.33
F. R. Sandford, March salary and horse hire	130.00
C. W. Sandford, March salary	75.00
Louis Jacques	9.60
C. W. Sandford, expense account	4.70
O. A. Dohm	4.00
H. B. Halsey Co.	1.85
Queen & Co.	11.25
Summit Herald	6.00
N. Y. & N. J. Telephone Co.	7.10
H. S. Fish	1.75
Matthias Plum	13.00
Gilbert Smith	20.00
Patrick Larney	10.00
S. H. Rollinson	50.00
Secretary, petty cash account	103.68
Arthur Tepper	87.00

On motion the meeting adjourned.

ARTHUR TEPPER,
Secretary

Joint Meeting of June 17, 1909.

ANNUAL MEETING.

Meeting called to order by Chairman Francis Speir, Jr.

Present: Francis Speir, Jr.; A. R. Denman, Newark; Aug. Lacombe, Irvington; Max Drodesser, West Orange; E. L. Smithers, Millburn, and O. B. Merrill, Summit.

The minutes of the last meeting were approved as printed.

The Engineer read the following report, which was accepted and ordered placed on the minutes:

"To the Joint Meeting:

"Gentlemen:—I beg leave to present the following report in connection with matters which have come to my attention and have been referred to me since the last meeting.

"In regard to the Stiles crossing, you will remember that at the last meeting I recommended that the three 24-inch pipes under the Stiles brook in Union Township be replaced by a single conduit. The form of this conduit I recommended to be the same as the sewer section on either side, namely, a 42-inch circular sewer; but stated that the sewer could be constructed in a flat section, with a width of about 8 feet and a height of about 2 feet. It will be remembered that I was authorized to receive bids upon the construction of the circular sewer, provided I could get the consent of Mr. Stiles to this type of construction.

"Pursuant to your instructions, I called upon Mr. Stiles and found that he was opposed absolutely to the construction of the circular type of sewer, and he suggested my making a formal application to him in writing as to the desires of the Joint Meeting in connection with the proposed change. In due time I received a letter from Mr. Stiles' attorney, referring me to the contract which his client had with the Joint Trunk Sewer, and advising me that if any change was made in the bed of the brook, Mr. Stiles would hold the Joint Meeting to the terms of its contract, namely, that they pay him $1,000.

"I have had conferences with Mr. Riker and Mr. Stiles' attorney in reference to this matter, and I have negotiations pending with Mr. Stiles looking to the adoption of a plan which will be satisfactory to him and which can be carried out with the least amount of damage. Mr. Stiles is willing to give us a right of way across his land other than the right of way agreement, which will decrease the amount of damage done to his property. I have not yet reached a definite conclusion upon this matter, but it seems to me that we will have some difficulty in entering upon the land without the payment of some money to the owner. I expect to

be able to report definitely upon this matter within the next few weeks, but in the meantime, there is no time being lost, for the reason that going upon the land at this time would be attended with considerable damage to crops; and as the flow in the sewer is relatively low at this season of the year, the non-construction of this sewer is no immediate detriment to the interests of the Joint Meeting.

"I have had some correspondence with the Chairman of the Joint Meeting with reference to notices received by him from the State Board of Health in connection with the storm-water overflow which was constructed under the Lyons Avenue bridge. Pursuant to a notice received by the Chairman from the State Board, I visited Trenton on Tuesday of this week and explained to them that the overflow in question is due to our desire to prevent the accumulation of storm water backing up into the cellars of certain property owners connected with certain branches of the Joint Trunk Sewer, and advised them that as soon as Newark constructs the storm sewer now under consideration through the old Borough of Vailsburg, the necessity of this overflow will have disappeared. Upon my representation that this sewer would likely be constructed within the year, they instructed the Clerk to notify the Secretary of the Joint Meeting to close up this overflow on or before the first day of January, 1910.

"For some time past we have had some difficulty with the sewer on Brookdale Avenue, in the lower part of Vailsburg. On account of bad foundation, the sewer has settled about 6 inches at the manhole just south of the intersection of *West Street. For some time, owing to the large amount of water that is entering the sewers in Vailsburg, the people along Brookdale Avenue have been having trouble with water backing up into their cellars. The City of Newark is contemplating the construction of a storm water sewer in this section, but it will be some time before its construction is completed. In any event, I believe that the capacity of this Brookdale Avenue sewer should be augmented. Recently West Street has been cut through east of Brookdale Avenue, and a sewer will sooner or later be necessary upon this new street. By constructing a sewer along West Street from Brookdale Avenue to West End Avenue, necessary relief for the Brookdale Avenue sewer can be obtained, for there has been no trouble experienced with the sewer on West End Avenue nor on the Joint Trunk Sewer below through Irvington, the trouble occurring alone in Brookdale Avenue. This sewer, if constructed, will be of value to the property owners on West Street, but at the same time, as it affords relief to the Joint Trunk Sewer, the question arises as to whether or not this should be constructed by the Joint Meeting and charged up to the munici-

*Now Ocean Avenue.

palities interested in the Fifth Section, viz., Newark, Vailsburg, Irvington, South Orange, or whether it should be built for and paid for by the property owners. If built of sufficient capacity for the property owners alone, an 8-inch pipe will be constructed; if built as a part of the Joint Trunk Sewer, a 12-inch sewer will be needed. The difference in cost would be about $200.

"I desire to have permission to open up the sewer on Brookdale Avenue below the junction of West Street to restore the sewer in this Avenue to its original condition. The probable expense in connection with this work will be about $75.

"It became necessary to order 6 ventilating manhole covers to be placed upon the sewers through Irvington. These manhole covers were billed at the same price as the last order, although they were cast from a special pattern. It will be necessary to extend these ventilating manhole covers over certain parts of the system, and I would recommend the purchase of at least half a dozen additional covers, to be placed where found most serviceable during the next six months.

"Respectfully submitted,

"ALEXANDER POTTER."

Moved that the subjects therein be taken up seriatim. So ordered.

Stiles Crossing.—Engineer reports progress.

Sewer on West Street.—Ordered referred to Newark Board of Works.

Regarding the Opening for Repairs of the Sewer on Brookdale Avenue.—Motion made that the matter be left to discretion of the Engineer as to the best time to have the work done. So ordered.

Regarding Purchase of Ventilating Manhole Covers.—The purchase of six, made recently, was ratified, and Engineer was authorized to purchase six additional when necessary.

The Treasurer read a report, which was received and ordered placed on file.

The Inspector's report was read and ordered placed on file.

The following resolution was then made and ordered adopted, the vote being 5 ayes, no noes:

"Resolved, That the several municipalities do raise and pay to the Treasurer of the Joint Meeting the sum of $1,525.00, which shall be assessed upon the Joint Municipalities in the proportion fixed by the contract between the several municipalities as pro-

vided for the care and maintenance of the Joint Sewer, i. e., each municipality paying an equal amount or one-seventh of such assessment (excepting the City of Newark, which shall pay two-sevenths, or one-seventh for Newark and one-seventh for the former Borough of Vailsburg), and further that the Secretary be directed to notify the various municipalities of such assessment and the proportion to be paid by each; and be it further

"Resolved, That the said moneys be paid to the Treasurer of the Joint Meeting within twenty days of the 17th day of June, 1909.

"This is the assessment for the second quarter of 1909."

The Board then went into an election of officers for the ensuing year.

The following were nominated and unanimously elected to serve for the year at same compensation as last year:

Chairman—Francis Speir, Jr.
Engineer—Alexander Potter.
Treasurer—Simeon H. Rollinson.
Secretary—Arthur Tepper.
Counsel—Adrian Riker.
Chief Inspector—F. Ross Sandford.
Assistant Inspector—Corey W. Sandford.

Mr. Aug. Lacombe made a motion that the Engineer be instructed to prepare plans and specifications for the construction of the Augusta Street Sewer, in accordance with the report of Messrs. Halsey, Potter and Rankin to the Joint Meeting December 17th, 1908. Motion duly seconded. So ordered.

Supplementing this motion, Mr. Denman moved that Engineer call for bids and that he send a preliminary report to the Newark Board of Street and Water Commissioners, anticipating their next meeting. Seconded and so ordered.

The Auditing Committee were instructed to examine the books of the Secretary and Treasurer for the year July 1, 1908, to July 1, 1909.

The following bills were audited and upon a vote being taken were ordered paid—4 ayes, no noes:

Alexander Potter, April salary	$ 83.33
F. R. Sandford, April salary	130.00
C. W. Sandford, April salary	75.00
Alexander Potter, May salary	83.34

F. R. Sandford, May salary	130.00
C. W. Sandford, May salary	75.00
E. H. DuVivier	3.00
Sessions Foundry Co.	59.02
H. L. Bond Co.	8.80
Adrian Riker	250.00
N. Y. & N. J. Telephone Co.	12.60
Summit Herald	6.00
J. C. Baunach	10.50
S. H. Rollinson	50.00
Arthur Tepper	87.00
Petty cash	88.89
Francis Speir, Jr.	15.00
A. R. Denman	15.00
Aug. Lacombe	15.00
L. V. Blanchet	10.00
E. L. Smithers	15.00
Max Brodesser	15.00
O. B. Merrill	15.00
F. R. Sandford, expense account	27.35

The Engineer then brought up the item of expense of the Inspector in maintaining the horse.

Mr. Denman moved that Mr. Sandford be paid the sum of $26.00 per month for upkeep of horse and harness for the use of the Joint Sewer, and further that he be directed to procure a suitable wagon for use in inspecting and other work, at a price not to exceed $210.00. So ordered. Vote: 4 ayes, no noes.

The Engineer was requested by the Chairman to arrange for the Annual Inspection.

On motion the meeting adjourned.

ARTHUR TEPPER,
Secretary.

Joint Meeting of July 22, 1909.

Special meeting held in Village Hall, South Orange, July 22, 1909.

Present: Francis Speir, Jr., Chairman; A. R. Denman, Newark; A. Lacombe, Irvington; M. Brodesser, West Orange; E. L. Smithers, Millburn, and O. B. Merrill, Summit.

Meeting called to order by Chairman at 8 o'clock P. M.

The Engineer had no written report, but stated that he had had specifications drawn up for the Augusta Street Sewer, which was duly advertised in the Engineering News—and he had sent the advertisement to half a dozen contractors.

The Secretary read a communication from "Greater Newark Associates," which was ordered placed on file.

A notice from the State Board of Health was read and ordered placed on file.

Mr. Denman made a motion, seconded by Mr. Lacombe, as follows:

"That a revised plan for the proportion of assessment for maintenance be adopted as substitute for the present plan, which appears to have become inadequate."

The Chairman invited discussion before motion was put to vote, and Mr. Smithers objected to immediate action, on the grounds that the present members of the Executive Committee are not fully posted on the subject, and recommended that it be more fully investigated.

An amendment was then offered that a committee be appointed to investigate and report on the question of apportionment of expenditures for maintenance. So ordered.

The Chairman appointed Messrs. Denman, Lacombe, Merrill and Smithers.

It was then moved and seconded that bids be opened. So ordered.

The Secretary was directed to open and read bills.

Two bids were proposed, each accompanied by certified check for one thousand dollars, and were by The Harrison Construction Company and John Dorer.

Harrison Construction Company.

350 feet of 15-inch vitrified pipe sewer, 6 to 8 feet deep. At $1.15 per foot	$ 402.50
650 feet of 15-inch vitrified pipe sewer, 8 to 10 feet deep. At $1.25 per foot	812.50
600 feet of 15-inch vitrified pipe sewer, 10 to 12 feet deep. At $1.50 per foot	900.00
7 manholes, 10 feet deep or less. At $40.00 each	280.00
8.0 feet of manholes, over 10 feet deep. At $3.00 per foot	24.00

30 4-inch branches on 15-inch pipe. At $1.50 each ..	45.00
10 cubic yards concrete. At $7.00 per cubic yard	70.00
3,000 feet of timber foundation. At $35.00 per M. feet	105.00
5,000 feet of sheathing. At $35.00 per M. feet	175.00
Total	$2,814.00

John Dorer.

350 feet of 15-inch vitrified pipe sewer, 6 to 8 feet deep. At $1.20 per foot	$ 420.00
650 feet of 15-inch vitrified pipe sewer, 8 to 10 feet deep. At $1.40 per foot	910.00
600 feet of 15-inch vitrified pipe sewer, 10 to 12 feet deep. At $1.60 per foot	960.00
7 manholes, 10 feet deep or less. At $45.00 each	315.00
8.0 feet of manholes, over 10 feet deep. At $5.00 per foot	40.00
30 4-inch branches on 15-inch pipe. At $1.50 each ...	45.00
10 cubic yards concrete. At $7.00 per cubic yard	70.00
3,000 feet of timber foundation. At $35.00 per M. feet	105.00
5,000 feet of sheathing. At $30.00 per M. feet	150.00
Total	$3,015.00

Mr. Merrill moved that contract be awarded to the lowest bidder at the prices included in their bid. This was duly seconded and a vote being taken was so ordered. 4 ayes, no noes.

A motion was then made and duly seconded that a contract. be executed between Harrison Construction Company and the Joint Meeting, provided it meets with the approval of Counsel, Mr. Riker. So ordered.

Motion was made that Secretary return certified check for one thousand dollars to the unsuccessful bidder and secure receipt for the same. So ordered.

The following bills were audited and upon a vote being taken were ordered paid. 4 ayes, no noes:

Alexander Potter, June salary	$ 83.33
F. R. Sandford, June salary	130.00
C. W. Sandford, June salary	75.00
Summit Herald	9.00
Sessions Foundry Co.	58.97
Kolesch & Co.	.50
N. Y. & N. J. Telephone Co.	3.50
Alexander Potter, July salary	83.33

F. R. Sandford, July salary	131.00
C. W. Sandford, July salary	75.00
Alexander Potter, August salary	83.34
F. R. Sandford, August salary	131.00
C. W. Sandford, August salary	75.00

The Engineer asked the Joint Meeting that an assistant be allowed him during the construction of the Augusta Street sewer.

A motion was made and seconded that a sum not to exceed seventy-five dollars ($75.00), or as much thereof as may be found necessary, be ordered for assistant. Vote resulted 4 ayes, no noes.

On motion the meeting adjourned.

ARTHUR TEPPER,
Secretary.

Joint Meeting of September 23, 1909.

Meeting called to order at 8 P. M.

Present: Francis Speir, Jr., Chairman; A. R. Denman, Newark; Aug. Lacombe, Irvington; Max Brodesser, West Orange; O. B. Merrill, Summit.

The minutes of last meeting approved as printed.

The Engineer made report as follows. Accepted and ordered placed in the minutes:

"To the Joint Meeting:

"Gentlemen:—I present herewith the final estimate for the construction of the relief sewer in Augusta Street, which work was duly awarded to the Harrison Construction Company.

"The construction of this sewer will unquestionably give immediately considerable relief to the property owners along Augusta Street, but it will not entirely remedy the conditions existing throughout this system until such time as the City of Newark constructs its relief storm water sewer for the Vailsburg section, which it has had in contemplation for some time, and the construction of which may be anticipated at any time.

"I would recommend that bids be invited from painters for painting the 36-inch cast iron pipe across the Elizabethtown Water Company's property at the Seven Bridges Road. This pipe has not been painted since the construction of the sewer in 1902.

"As was apparent to those members of the Commission who made an inspection of the Joint Trunk Sewer last Monday in

automobiles placed at the disposal of the Commission through the courtesy of Mr. Denman and Mr. Sherrerd, Chief Engineer of the Board of Public Works of Newark, the sewage at the present time is quite concentrated, owing to the fact that the ground water in the sewers is practically eliminated. This condition is favorable for determining the actual sewage flow of any district if the ground water could be wholly eliminated. I have in course of preparation calculations which will show the ground water flow per capita under dry weather conditions. This information is of great importance, especially for a community like South Orange Township, which is struggling with the question of additional capacity in the Joint Trunk Sewer. My contention is that, eliminating ground water, it is possible for this Township to get along with a very much less per capita consumption than the other municipalities. This, of course, means a somewhat increased cost of sewer construction, but as between the increased cost of sewer construction and the retarding of legitimate progress which would unquestionably follow if the Township had sufficient outlet capacity, there can be no question as to the wisdom of spending more money in sewer construction than would otherwise be necessary.

"South Orange Township has made formal and informal application to the various municipalities in the Joint Sewer for space, and at the present time they are hoping that this additional space may be secured either from Newark or from Summit. This whole question, therefore, becomes one of interest to all the municipalities: first, because each of the towns in this district is vitally interested in the welfare of the other towns; and, second, it is important to know just what each town actually needs, and what each town can afford to release.

"Within the last week Mr. Rankin, Engineer of Sewers of the City of Newark, asked my opinion in reference to the subdivision of the cost of the Ocean Avenue sewer in the Vailsburg district of the City of Newark. After conferring with Mr. Lacombe, representative from Irvington, I advised Mr. Rankin that Irvington was willing to pay the usual assessment for joint sewers built in the fifth section. The assessment for new constructions to be paid by each of the municipalities in the fifth section is as follows:

Newark	26.18 per cent.
Irvington	42.35 per cent.
Vailsburg	27.33 per cent.
South Orange	4.14 per cent.

"Newark, having absorbed Vailsburg as a part of the city, pays Vailsburg's share of this cost.

"The construction of this Ocean Avenue sewer not only serves as a relief for the Joint Trunk Sewer, it is also of value to the

abutting property on Ocean Avenue, and while Irvington is willing to be assessed for its share of the cost of this sewer, a question arises as to whether or not the Joint Body as a whole should take action as to the distribution of the cost of this sewer, or whether the payment for its construction is a matter which should be settled individually between the three towns which have heretofore been asked to contribute toward additional trunk sewers built in this section.

"I beg to state that the Committee on the reapportionment of the cost of maintenance have had several meetings, one of which I attended, and I presented to this Committee a report on my findings. I will not dwell upon this matter in this report, as the result of these conferences will be dwelt upon in the Committee's report, which will be presented to-night.

"Respectfully submitted,

"ALEXANDER POTTER."

The subjects touched on in the report were taken up seratim.

Re Ocean Avenue Sewer.—Recommended that Engineer refer to Counsel the facts and report later to Joint Meeting his opinion as to apportionment of costs. So ordered.

Re Painting Iron Pipe.—Engineer authorized to advertise for bids for painting this cast iron pipe across the Elizabethtown Water Co.'s property to and including the Rahway River crossing.

Re Final Estimate Harrison Construction Co.—Mr. Denman offered the following resolution:

"Whereas, The Engineer having reported that the work of constructing the Augusta Street Relief Sewer, in Section Five (A. Q. T.) by the Harrison Construction Company has been completed and has recommended the acceptance of the work;

"Resolved, That the same be and is hereby accepted and payment thereof in accordance with the contract for the amount of $3,017.20 due thereon as reported by the Engineer, is hereby authorized, less 5 per cent., which shall be retained for six (6) months; provided, however, that the contractors shall have certified before such payment is made that all bills for material and labor for the work of construction have been paid."

Carried. Four ayes. No noes.

Mr. Denman then offered the following resolution, seconded by Mr. Lacombe:

"Resolved, That the several municipalities, viz., Newark, Irvington and South Orange, represented in the Fifth Section of the Joint Trunk Sewer, do raise and pay to the Treasurer of the Joint Meeting the sum of $3,185.20 to provide for the payment to the contractors for the building of the Augusta Street sewer, together with the payment of the bills of the Engineer and Inspector, which amount shall be assessed upon the several municipalities in the proportion fixed by the contract between the several municipalities.

"Resolved, That the Secretary be directed to notify the several municipalities of said assessment and the proportion to be paid by each, and, further, that the said moneys be paid to the Treasurer of the Joint Meeting within twenty days from the 23rd day of September, 1909.

Proportion:

Newark	26.18 per cent.	$ 833.89
Vailsburg	27.33 per cent.	870.51
Irvington	42.35 per cent.	1,348.93
South Orange	4.14 per cent.	131.87
		$3,185.20

Carried. Four ayes. No noes.

The Inspector's report was read and ordered placed on file.

The Treasurer's report was read and ordered placed on file.

Mr. Merrill then offered the following resolution:

"Resolved, That the several municipalities do raise and pay to the Treasurer of the Joint Meeting the sum of $1,525.00, which shall be assessed upon the joint municipalities in the proportion fixed by the contract between the several municipalities, as provided, for the care and maintenance of the Joint Sewer, i. e., each municipality paying an equal amount, or one-seventh, of such assessment (excepting the City of Newark, which shall pay two-sevenths, or one-seventh for Newark and one-seventh for Vailsburg), and, further, that the Secretary be directed to notify the various municipalities of such assessment and the proportion to be paid by each; and be it further

"Resolved, That the said moneys be paid to the Treasurer of the Joint Meeting within twenty days of the 23rd day of September, 1909.

"This is the assessment for the third quarter of 1909."

Resolution adopted. Four ayes. No noes.

The Committee on Assessment for Maintenance, consisting of Messrs. Denman (Chairman), Smithers, Lacombe and Merrill, made the following report:

"The Committee finds that the cost of maintenance for the last two years has been about as follows:

"For every $100.00 expended—

$24.70 is chargeable to Newark.
16.90 is chargeable to Irvington.
14.70 is chargeable to Millburn.
14.70 is chargeable to Summit.
14.50 is chargeable to South Orange.
14.50 is chargeable to West Orange.

"Expressed in terms of forty-ninths—

Newark's	proportion would be	12/49
Irvington's	proportion would be	8/49
Millburn's	proportion would be	7/49
Summit's	proportion would be	7/49
South Orange's	proportion would be	7/49
West Orange's	proportion would be	7/49

with 1/49 not accounted for, due to the fractional division."

Mr. Brodesser moved that the report be accepted. So ordered.

The Committee recommended that the change in assessment for maintenance be adopted for a period of three years and take effect January 1, 1910, and continue until modified by a new contract. So ordered.

A motion was made and seconded that a contract be drawn by Counsel in accordance with Committee's recommendation, and that a copy of Committee's report and recommendation be sent to each municipality, with request for concerted action in the matter. So ordered.

Mr. Denman then asked whether there were a supply of the Red report of Joint Meeting on hand, and on learning that the edition was about exhausted, suggested that a new edition be prepared and revised to date by Engineer, as several officials of the various municipalities would like to obtain copies.

It was moved that the Engineer investigate the cost of such an edition and report to the Joint Meeting. So ordered.

The following bills were read and ordered paid, four ayes, no noes:

Alex. Potter (September salary)	$ 83.33
F. R. Sandford (September salary)	131.00
C. W. Sandford (September salary)	75.00
Engineering Record	8.00
T. A. Sandford Co.	22.85

Summit Herald	60.00
N. Y. & N. J. Telephone Co.	6.80
Arthur Tepper	87.00
Secretary, petty cash	82.81
Charles Brauner	93.00
Alex. Potter	75.00

Mr. Denman then offered the following resolution, which was duly seconded:

"Whereas, On December 17th, 1908, the following minute was adopted by the Joint Meeting, viz.:

"'*Report of Engineering Committee to Investigate the Conditions on Augusta Street and Lincoln Place, Irvington.*

"'To the Joint Meeting:

"'Gentlemen:—In accordance with the resolution of your Board, we beg to report upon the condition of Augusta Street and Lincoln Place, and to make certain recommendations which, in our judgment, will relieve the situation.

"'*The Augusta Street Sewer.*—There are two matters in connection with the Augusta Street sewer which have received attention at our hands: first, the question of the surcharging of the existing sewer and the means of remedying the same. We find that the present sewer is large enough for all the present requirements, and all probable future requirements, so far as the house sewage itself is concerned; but because the sewers tributary to the Augusta Street sewer pass through a territory surcharged for the most part of the year with ground water, the sewer is not of sufficient size to take care of all the water that reaches the sewer during and after a heavy rain storm. The City of Newark is expected during the coming year to construct a storm water sewer in the Vailsburg section. This will drain the pond at Fifteenth Avenue and South Twentieth Street, which has at times overflowed into this branch of the Joint Outlet Sewer. With this trouble eliminated and the gradual silting up of the joints throughout the system, it is believed that there will never be any more water to be carried through the Augusta Street sewer than there is at present. In other words, the maximum has probably been reached. As the sewer in Augusta Street, however, is constructed so near the surface, we are of the opinion that an additional sewer should be placed in this street at such a depth that it will afford sewage facilities to all houses that may subsequently be built upon this street.

"'We would recommend that the connections to the present sewers between Lyons Avenue and Cottage Street be disconnected from the existing sewer and connected to the deeper sewer.

"'From the data in Mr. Potter's office we find that the greatest amount of water passing down this street has been about forty per cent. in excess of the carrying capacity of the sewer when running full. We are therefore of the opinion that a second sewer constructed as above suggested, with a capacity equal to the present sewer, will answer all requirements of the case. The present sewer on this street is 12 inches in diameter. A 15-inch sewer built upon a grade of .3 of a foot in 100 feet will create a capacity of double the present carrying capacity of the single 12-inch pipe, and we would recommend its construction.

"'*Odors on Lincoln Place and Augusta Street.*—The matter of the odors on Augusta Street and Lincoln Place has also been considered by us. In the attempt to exclude the ground water from this section, the manholes on the Joint Trunk Sewer and throughout Irvington have been plugged up so that the gas generated throughout the sewerage system had to find some other way of escape than through the manhole covers. The plumbing law of Irvington is copied largely from the Newark plumbing ordinance, which provides for intercepting traps on all house sewerage connections. With these traps working properly and with the manholes closed to prevent the escape of air into the streets, there is only one logical sequence, and that is, that the foul sewer air makes itself felt more pointedly wherever there happens to be an open manhole cover or other access to the air. There is only one remedy for this condition, and that is that the intercepting traps be cut out. This is in accordance with the best sanitary regulations and is the system used in East Orange and several other neighboring towns. Years ago these traps were considered an absolute necessity on all sewerage systems, but at the present time, in the majority of modern sewerage systems they are omitted altogether and dependence placed upon the individual traps on the fixtures. With the intercepting trap omitted from the main house connections, contrary to what might be expected, there is less responsibility in not having the individual traps perfect than before, for the reason that, with the intercepting traps omitted, the sewer gas as it is first generated in the mains finds an immediate exit through the ventilating pipes to the roof and is not present in volume nor strength to the same extent as where it is confined back of the trap until it gains sufficient strength to force the trap, where there is greater chance of its forcing the individual traps as well. The presence of these house traps has been repeatedly shown to be a source of possible danger where sanitary inspection has been inefficient, for the ventilating pipe in such a system is carried up from the house lateral and is terminated a few feet above the ground, so that the gas from the sewer passes up in front of the house, causing noxious odors in the vicinity of such a ventilator. We would therefore recommend that the system

of intercepting traps be dispensed with in all the towns connected with this Joint Trunk Sewer where such action has not already been taken.

"'Respectfully submitted,

"'ALEXANDER POTTER,
"'EDWARD S. RANKIN,
"'EDMUND R. HALSEY.'"

Mr. Eggers then submitted the following resolution, which was unanimously adopted:

"Whereas, Complaints have been lodged with the Joint Meeting about odors emanating from the sewers; and,

"Whereas, An engineering commission, composed of Alexander Potter, E. S. Rankin and E. R. Halsey, appointed by the Joint Meeting to investigate the causes of these odors, has recommended the removal of all intercepting traps on the main house laterals as the most efficient method of dealing with the sewer air problem; therefore, be it

"Resolved, That a copy of the Engineer's report be sent to the members of all the governing body of the municipalities interested in the Joint Trunk Sewer, with the request that their plumbing laws be amended in accordance with the Engineers' recommendation; be it further

"Resolved, That the various municipalities be asked to take the necessary steps to have all existing traps, both on the lateral sewers and on the joint sewers passing through the respective towns, removed; be it further

"Resolved, That no permit be granted by this body for a sewer connection without a stipulation that the house trap be omitted.

"And Whereas, Copies of the same, by direction of the Joint Meeting, were delivered to the governing bodies of the various municipalities affected; and,

"Whereas, Further complaints have recently been made to the Joint Meeting that conditions in Irvington, especially that part of the Joint Trunk Sewer passing through Augusta Street from Clinton Avenue to Lyons Avenue, have been intolerable by reason of foul odors emanating from the Joint Sewer; and,

"Whereas, It has been suggested to the Joint Meeting by Engineers Alexander Potter, Edward S. Rankin and Edmund R. Halsey that the remedy therefor lies in a proper ventilating of all sewer traps leading to the Joint Trunk Sewer or in the entire elimination of all said traps; be it

"Resolved, That the Board having in charge the health conditions of the Town of Irvington be and the same is hereby expressly requested to adopt such measures as will tend to relieve

the situation immediately; and, further, that the Secretary be directed to send a copy of this resolution to the Irvington Board of Health."

So ordered.

On motion the meeting adjourned.

ARTHUR TEPPER,
Secretary.

Joint Meeting of October 13, 1909.

SPECIAL MEETING.

Held at the office of Commissioner A. R. Denman, room 333, Prudential Building, Newark, October 13, 1909, at 4 P. M.

Present: Messrs. Denman, Merrill, Smithers, Brodesser and Lacombe; Mr. Potter, the Engineer, was also present.

In the absence of Mr. Speir, Mr. Denman was elected temporary chairman.

The Chairman stated that the objects and purposes of this meeting were, first, the question of the advisability of reprinting an edition of the pamphlet descriptive of Joint Trunk Sewer, and second, the receiving of bids for painting the exposed cast iron pipe section of the sewer at Elizabeth River and Rahway River, crossing and across the land of Elizabethtown Water Company, and such other business as might come before the meeting.

Two bids for printing the pamphlet were received, as follows:

New York Printing Co., $165.00 for 500 copies; $225.00 for 1,000 copies.

The Schultz Gasser Co., $232.00 for 500 copies; $360.00 for 1,000 copies.

Mr. Merrill made motion, seconded by Mr. Brodesser, that the bid of the New York Printing Co. (being the lowest bid) be accepted—$225.00 for 1,000 copies.

A vote being taken by roll call resulted 5 ayes, no noes. So ordered.

The Chairman requested the Engineer to make the necessary arrangements for the edition, assisted by Special Committee of two consisting of Messrs. Speir and Merrill.

A motion was made and duly seconded that the Engineer be authorized to spend not to exceed $45.00 for having maps lithographed, said maps to include all the latest data. The Engineer to get two or more bids for this work. Carried, 5 ayes, no noes.

It was moved and seconded that bids for repainting cast iron pipes be opened. So ordered.

J. P. Kernan bid $100.00 for one coat; $150.00 for two coats.

Nelson Bros. bid $318.00 for one coat; $518.00 for two coats.

Mr. Brodesser made a motion that the bid of J. P. Kernan for $150.00 (being the lowest bid) be accepted, with provision that the paint used be that specified by Mr. Potter in requesting bid. This paint is known as the "Solway Hydraulic Paint." A vote being taken resulted 5 ayes, no noes. So ordered.

Mr. Denman brought up the subject of a supplemental trip of inspection—to visit those remote portions of the system which were not included in trip of September 20th.

It was decided to go on Monday, October 18th, leaving City Hall, Newark, at one o'clock P. M.

On motion the meeting adjourned.

ARTHUR TEPPER,
Secretary.

Joint Meeting of December 30, 1909.

Held in South Orange Village Hall.

Present: Francis Speir, Jr., Chairman, and Representatives Denman, of Newark; Lacomb, of Irvington; Brodesser, of West Orange; Hill, of South Orange; Smithers, of Millburn, and Merrill, of Summit.

The meeting was called to order by the Chairman. As the minutes of the previous meeting had not yet been printed, no action was taken on them.

The Engineer was not present but sent in his report as follows:

"December 30, 1909.

"To the Joint Meeting:

"Gentlemen:—I regret that a professional engagement calls me away from the city at the time of the last meeting of the year. I have, however, taken up all matters needing attention with Mr. Sandford, and beg to report as follows:

"The two important matters upon which action was taken during the year are the construction of the relief sewer in Augusta Street and the construction of the relief sewer in Ocean Avenue. In recommending the construction of these sewers I advised the Joint Meeting that I was of the firm opinion that they would afford immediate relief from the congested condition of the sewer in certain parts of Vailsburg and Irvington. Since their completion we have had an opportunity of testing their efficiency. Your Engineer had an understanding with the Chief Inspector and his assistant, that during or immediately after a very heavy rain storm they should inspect those portions of the system upon which trouble had occurred in the past, to observe the condition of the sewer under the most trying circumstances. The report of Mr. Sandford as to the conditions he found on Augusta Street and Ocean Avenue after the heavy and almost unprecedented rain storm of Monday, December 13th, indicates that the construction of these sewers has afforded the relief expected. Mr. Sandford will report upon these matters more in detail.

"As pointed out previously, however, the construction of these relief sewers should not be a warrant for the continuation of some of the methods used in constructing house laterals in certain of the towns connected with the Joint Trunk Sewer. The most careful method of construction should be observed in order that the very valuable rights which the various towns have in the Joint Sewer may be preserved to them for the greatest period of time possible.

"I present herewith correspondence with Mr. Riker in reference to the status of the Ocean Avenue sewer. It is Mr. Riker's opinion that, because the City of Newark advertised individually for the construction of the sewer in that street, the Joint Meeting as a body cannot pay for any part of the construction thereof. For any benefit derived by Irvington or South Orange Village from the construction of this sewer, the City of Newark must look directly to these municipalities for reimbursement. It was tacitly agreed by Irvington that they would pay their pro-rata share of the cost of this sewer, had the Joint Meeting proceeded with its construction, and I presume that Irvington, under the new conditions, will stand ready to contribute this amount towards the construction of the Ocean Avenue sewer. South Orange Village had no representative present when this matter was decided upon, and consequently the City of Newark must take up directly with

the Village the question of reimbursement. The percentage which each of these towns would have had to pay had the Joint Meeting built the sewer itself is as follows:

Newark	26.18%
Newark on Acct. Vailsburg	27.33%
Irvington	42.35%
South Orange Village	4.14%

"Mr. Sandford reports that several of the recording gauges have been repaired so many times that they are of practically little value. Some of these gauges have been in use for six years, and I would recommend that at least three new ones be purchased. With your permission, I purchased over a year ago a new type of gauge from Richards Bros., from which we receive more reliable gaugings than from the old form of Dibble clock purchased from Queen & Co., although the price is slightly less. The last prices quoted by each of these firms were as follows:

"Queen & Co., $67.50 apiece; Richards Bros., $53.00. I have asked for new quotations from both of these firms for immediate acceptance. Richards Bros. quote a price of $67.00 apiece, f. o. b. New York; and Queen & Co. quote $75.00 apiece net f. o. b. Philadelphia. I would recommend the purchase of three new gauges to take the place of those that are obsolete.

"I have in course of preparation a series of tables which will be published in the new report, showing the diminution of the ground-water flow throughout the system. We have abundant proof that the ground-water in the system is gradually diminishing, and in many parts of the system the diminution in the ground-water is about equal to the increment in the sewer flow, which gives assurance that the life of the sewer as originally estimated will be fulfilled. Mr. Sandford will refer you to a special instance indicating this decrease in the ground-water flow in the lower portion of the sewer.

"The contractor to whom was awarded the contract for painting the iron pipe crossings reports that he started the work last week, and will be finished in a few days.

"Respectfully submitted,

"Alexander Potter."

The following correspondence between Mr. Potter and Mr. Riker was read:

"New York, October 2, 1909.

"Mr. Adrian Riker,
"164 Market Street,
"Newark, N. J.:

"My Dear Mr. Riker:—I enclose you extract from my report presented to the Joint Meeting on September 23rd, when a reso-

lution was passed to the effect that this matter be referred to you. If you desire any further information than is contained in this extract from my report, I shall be glad to furnish it to you.

"Yours very truly,

"ALEXANDER POTTER."

"Newark, N. J., October 5, 1909.

"Alexander Potter, Esq.,
"114 Liberty Street,
"New York City.:

"Dear Sir:—I have yours of October 2d, enclosing extract from your report to the Joint Meeting, September 23, 1909. I do not understand clearly whether the proposed sewer in Ocean Avenue is an appurtenance to the main sewer found to be necessary for the proper operation of the main sewer, or whether it is really a new construction for the benefit of the City of Newark and the Town of Irvington. In the former case, I am of opinion that it would be a similar construction to the relief sewer in Augusta Street, Irvington, and should properly come under the control of the Joint Meeting. In the latter case it should be a matter of private contract between the several municipalities interested in it. Perhaps as a matter of practical policy, there is but little difference, as a supplemental contract should be entered into by the three municipalities which will have to pay the cost of the work.

"I have also had handed to me by Mr. Denman your letter of September 28th, and a copy of the record of the committee on the readjustment of the cost of maintenance. I drew a contract for this purpose some time ago but do not seem to have retained a copy. If you have a copy of that contract I wish you would let me have it.

"Is there anything new in the matter of the Roselle Park sewer?

"Yours very truly,

"ADRIAN RIKER."

"New York, October 15, 1909.

"Mr. Adrian Riker,
"164 Market Street,
"Newark, N. J.:

"Dear Sir:—Your letter of October 5th was duly received, and answer was delayed pending an investigation of some of the matters raised in it.

"I am of the opinion that the construction of the Ocean Avenue Sewer is a similar construction to the relief sewer in Augusta Street. In order to assess back part of the cost of this sewer upon the abutting property owners, Newark's Counsel thought it best to let this contract themselves. In order to make

it a Joint Sewer matter, a resolution was passed at the meeting on Wednesday afternoon. I have asked Mr. Tepper to send you a copy of this resolution before printing it in case its legal form should not be satisfactory to you.

"In reference to the contract for the apportionment of the cost of maintenance which you prepared several years ago, I find from my records that you sent me six copies and that I sent all six copies to the clerks of the various towns. I made special request of the members of the Joint Meeting to have the clerks of their respective towns send me a copy, hoping thereby to get at least one copy out of the five or six.

"In reference to Roselle Park, the situation is as follows: They expect to build five or six miles of sewers. It will be necessary to take a vote of the people upon this matter; they will ask the people to vote a sum sufficient to pay for the cost of the sewers plus the amount to be paid to the Joint Meeting. I am informed that this election will take place within the next six weeks or two months. Until that time nothing can be done looking to the preparation of a contract.

"Yours very truly,

"ALEXANDER POTTER."

"Newark, N. J., October 26th, 1909.

"Alexander Potter, Esq.,
"116 Liberty Street,
"New York City:

"Dear Sir:—I am this morning in receipt of a letter from the Secretary of the Joint Meeting containing a form of resolution with reference to a sewer in Ocean Avenue. I got the impression that it was desired to assess upon the abutting property the cost of this sewer at least in some one or more of the municipalities. I am perfectly clear that no assessment can legally be made for the cost of this sewer in any of the municipalities if it is constructed in pursuance of this resolution. The matter in my opinion should, therefore, be brought to the attention of the legal department of the municipality or municipalities which may desire to assess the cost before anything further is done.

"I also would like to know what the amount of the contract may be. If it is work which under the statute must be done under contract awarded upon bids advertised for, then the procedure is clearly wrong. The work should have first been authorized by the Joint Meeting and bids directed to be advertised for. These bids when presented should have been opened in the presence of the Joint Meeting and the contract awarded upon the opening of such bids.

"You will recall the fact that the statute requires that work in excess of $500.00 should only be authorized by contract upon advertised bids.

"Clearly the procedure adopted as indicated by the copy of the resolution sent by Mr. Tepper does not conform with the statute if the amount of the contract exceeds $500.00.

"Yours truly,

"ADRIAN RIKER."

"New York, October 28, 1909.

"Mr. Adrian Riker,
"164 Market Street,
"Newark, N. J.:

"Mr Dear Mr. Riker:—I have your letter of October 26th. I recommended the procedure suggested by you to the Joint Meeting. It was the desire of the City of Newark to assess back upon the abutting property owners all or a portion of Newark's share in the construction of the Ocean Avenue sewer, and in order to be able to do so, the City Counsel of Newark advised Mr. Denman to advertise for bids and to let the work themselves, and this was done before the matter was referred back to the Joint Meeting. The recent action of the Joint Meeting was taken upon the assumption that Newark's advertisement could be construed as the Joint Meeting's advertisement, especially since Irvington's representative expressed his willingness and the willingness of his city to pay its share of the cost. These are the facts in the case. That the bids were not opened in the presence of the Joint Meeting is also a fact. The Joint Meeting, however, will be guided by your opinion as to the proper procedure in this matter.

"Yours very truly,

"ALEXANDER POTTER."

"Newark, N. J., October 20, 1909.

"Mr. Alexander Potter,
"114 Liberty Street,
"New York City:

"Dear Sir:—I have yours of October 28th. The advertisement by Newark in the matter of the Ocean Avenue sewer will not, in my judgment, enable the City to assess property for benefits from this sewer, if the work is done by the Joint Meeting. However, this matter must be passed upon by the Counsel of the City of Newark.

"I will be very sorry if this complication delays the construction of the work. Nevertheless I would suggest that you put it up to the Law Department of the City of Newark to determine just what procedure they think is necessary to enable them to assess the benefits from this work. When this has been received we can then determine upon the procedure to be adopted.

"Yours very truly,

"ADRIAN RIKER."

A motion was made and duly seconded that Mr. Potter's report be received and placed on the minutes and the various subjects be taken up seriatim. So ordered.

Regarding Ocean Avenue Sewer.—A motion was made and duly seconded that the Secretary be directed to inform the municipalities of Newark, Irvington and South Orange of the complications regarding the payment for this work and quote in a communication that part of Mr. Potter's report and such of Mr. Riker's letters as bear upon the subject.

And further that while the Joint Body has no power to act in the matter, it would suggest that the various municipalities arrange between them for the payment for the construction of Ocean Avenue sewer.

And further that the Engineer's recommendations are endorsed by the Joint Body. So ordered.

New Gauges.—Motion made and duly seconded that the Engineer be authorized to purchase three Richards' gauges at a price not to exceed $67.00 each f. o. b. New York. So ordered.

The report of the Inspector was read and ordered placed on file.

The following communication from South Orange Township addressed to Mr. Francis Speir was read and referred to the representatives of the various municipalities:

"Maplewood, November 10, 1909.

"Mr. Francis Speir,
"President Joint Outlet Sewer Commission,
"South Orange, N. J.:

"Dear Sir:—As you are aware the Township of South Orange is desirous of acquiring further capacity in the Joint Outlet Sewer. There has been purchased from Millburn 25% of their allotment, or a capacity of 547,000 gallons per diem. There is under lease from South Orange Village a privilege for 500 house connections, which the Engineer makes equivalent to a capacity of 375,000 gallons per diem, or a little in excess of 10% of South Orange Village allotment. In order to bring the matter to some definite decision an offer has been made to the Municipalities of Summit, West Orange, Newark and Irvington to purchase from them 10% of their allotted capacity at its cost price, plus interest and maintenance charges to date, and an additional profit to them of 25% of cost, accompanying which offer is the notation that a similar one is made simultaneously to the other municipalities

comprising the full ownership in the Outlet Sewer. The figures used in the offers made are compiled from the report of the Joint Meeting and the statements made are from information furnished by the Joint Outlet Engineer, namely, that at the time of construction the Outlet Sewer was enlarged to a capacity of 21 million gallons per diem, as against a contemplated capacity when first arranged of 14 million gallons per diem, the increased capacity to be used in the future for sale to Chatham, Madison, Morristown, etc. It is now known that these municipalities have abandoned any idea of using this Trunk Line and have created systems of their own. It would seem as if under the circumstances the present owners would be willing to sell space which was evidently not needed for their own sewage, or no longer likely to be disposed of in any other way than to South Orange Township at a fair profit.

"The development in our Township is taking such shape and the demands made on this Committee for the privilege of laying sewer laterals in newly opened streets is becoming so pressing that it must be determined whether the system to be used shall be designed for connection with the Outlet Sewer or an entirely different system with disposal plants created. Having already large interests in the Outlet Sewer and being so closely connected with the municipalities owning it (our territory practically being surrounded, one may say, by the Trunk Line territory), it would seem as if it were better that both the municipality of South Orange Township and those owning the Trunk Line should agree upon a purchase and sale of a sufficient amount of space in the Outlet Sewer to enable this Committee to continue the system of street laterals which has already been started and the extensions for which are being demanded now in every part of the Township.

"This communication is addressed to you so that the Joint Outlet Sewer Commission can be made acquainted at their next meeting with the situation as it now exists, and the offers which have been made to each of the individual owners for a portion of their capacity. It may be that when the representatives meet together investigation of the records will show which of them can best afford to sell space, and that a counter-proposition can come back to us from some of them for more or less than the figures used by this Committee in making the offer to purchase.

"With the accompanying agreement, as in the case of Millburn, that the Township of South Orange shall in the future bear its proportion equal to the capacity purchased, of all charges made against such municipality for maintenance, alterations, repairs, etc., it does seem as if no great risk was involved in the selling of this surplus space at this time.

"Appreciating the fact that the ownership in the Trunk Line is an individual one, this communication is nevertheless addressed

to you in the hopes that the matter can be treated collectively by the various municipalities, and some definite understanding arrived at as to whether this Township can purchase further capacity or not. Thanking you in advance for bringing the matter to the attention of the various municipalities at the earliest date possible, I am,

"WILLIAM H. KEMP,
"Chairman Township Committee."

The following communication to Board of Health, Irvington, was read by Secretary:

"Millburn, N. J., November 3, 1909.

"Board of Health, Irvington, N. J.,
"Mr. Edw. Berry, Secretary:

"Gentlemen:—At a meeting of the Joint Meeting, held September 23, 1909, a resolution regarding the abolishment of house traps in connecting with Joint Sewer was passed and the Secretary was directed to send a copy of the same to your Board.

"Accordingly I am enclosing a copy of the minutes of said meeting, having marked the portion referred to.

"Yours truly,
"ARTHUR TEPPER,
"Secretary."

The following bills were then read and ordered paid; vote being by roll call resulted 5 ayes to 0 noes:

Harrison Construction Co.	$2,866.34
Alexander Potter, Oct. salary	83.34
F. R. Sandford, Oct. salary	131.00
C. W. Sandford, Oct. salary	75.00
Alexander Potter, Nov. salary	83.33
F. R. Sandford, Nov. salary	131.00
C. W. Sandford, Nov. salary	75.00
Alexander Potter, Dec. salary	83.33
F. R. Sandford, Dec. salary	131.00
C. W. Sandford, Dec. salary	75.00
Summit Herald	12.00
N. Y. Telephone Co.	10.10
J. Colyer & Co.	185.00
Jackson Awning Co.	16.00
Brown & Rusling Co.	6.00
Frank S. Bailey	10.00
Francis Speir, Jr.	15.00
A. R. Denman	20.00
O. B. Merrill	20.00
Max Brodesser	20.00

F. J. Hill	5.00
Aug. Lacombe	20.00
E. L. Smithers	15.00
S. H. Rollinson	50.00
Arthur Tepper	87.00
Secretary, petty cash	144.75

On motion the meeting adjourned.

ARTHUR TEPPER,
Secretary.

Joint Meeting of February 24, 1910.

A meeting of the Joint Meeting was held in South Orange Village Hall, Thursday evening, February 24th, 1910.

Present: Francis Speir, Jr., Chairman; A. R. Denman, Newark; O. B. Merrill, Summit; M. Brodesser, West Orange; E. L. Smithers, Millburn, and A. Lacombe, Irvington.

The minutes of the last meeting were approved as printed.

The Engineer read the following report, which was accepted and ordered placed on the minutes:

"February 24, 1910.

"To the Joint Meeting:

"Gentlemen:—Some time ago the Township of South Orange made application to the various municipalities comprising the Joint Meeting for a portion of their sewage capacity. As a result of this request, in order to give an intelligent answer, I have received requests from most of the towns for information concerning the maximum and minimum discharge from their respective towns into the Joint Trunk Sewer during the past five years. The securing of this information has entailed a great deal of labor upon your Engineer, and has delayed the completion of the new matter to go into the report which the Joint Meeting authorized to be printed. The information secured, however, is of such value that its incorporation in the new report will far outweigh the delay in having this book go through the hands of the printer more promptly.

"I present with this report one of the tables which I have prepared for the new report, which is perhaps of general interest. This table gives the capacity allotted to each of the municipalities, and also the extent to which this capacity has been used since the inception of the sewer. As the table indicates, they are average capacities. The daily discharge from each of the towns during

the week of maximum flow in one year is approximately sixty per cent. in excess of these figures, and the average daily discharge during the driest week of each year is approximately half of these figures.

"Since the last meeting, the Borough of Roselle Park have agreed to accept the terms of the Joint Meeting for securing additional space in the Joint Trunk Sewer, and have not only agreed to pay $7,500 for an additional 500,000 gallons, but have exercised their option, given to them for one year, on 500,000 gallons additional capacity for $7,500 more; or, in other words, while they have a present capacity in the Joint Trunk Sewer of 375,000 gallons, they have agreed to purchase 1,000,000 gallons additional for $15,000. Mr. Riker submitted to me a form of contract, which I have gone over and returned to him with certain suggestions. As soon as this contract has been ratified, it will be submitted to the Joint Meeting for their approval, and by you submitted to the various municipalities for their individual consent.

"In this connection I beg to report that I received a letter from Mr. Walker, Counsel for the El Mora Land Company, who informs me that his company is about to enter into an agreement with Roselle Park for taking care of their sewage through their trunk line which enters the Joint Trunk Sewer. I have advised Mr. Walker that it is my opinion that the Joint Meeting should have an opportunity of examining any contract of this kind before it is entered into, and in this opinion Mr. Riker concurs. I should like to have the opinion of the Joint Meeting as well in reference to this matter.

"I present herewith the bill of J. P. Kernan for painting the iron pipes across Elizabeth River and across the Elizabethtown Water Company's property. I can report on the Elizabeth River Crossing; this has been completed in a satisfactory manner. So far as the crossing over the Elizabethtown Water Company's property is concerned, there has been so much ice and snow around the lower portion of this pipe that it has been difficult to make as thorough an examination of the work as I should like. I therefore recommend that a payment of $100 on account be made to Mr. Kernan, and that the balance be retained until such time as I can give a certificate that the work has been completed in accordance with the specifications.

"I also present a statement from Mr. E. H. DuVivier, for $2.50 due him for charts furnished for the French gauge in August of last year.

"Respectfully submitted,

"Alexander Potter."

Average Daily Contributing Flow in Gallons to the Joint Trunk Sewer by the Various Municipalities.

Name.	1905.	1906.	1907.	1908.	1909.
Newark	1,460,000	1,825,000	2,580,000	2,515,000	2,225,000
Irvington	1,660,000	1,765,000	1,450,000	2,205,000	2,265,000
South Orange	940,000	970,000	995,000	1,270,000	900, 00
West Orange	645,000	805,000	1,445 000	1,520,000	1,510, 00
Summit	930,000	826,000	945,000	1,139,000	1,034,000
Millburn	533,000	472,000	540,000	653,000	592,000
Total from all municipalities	6,168,000	6,663,000	7,955,000	9,302,000	8,526,000

NOTE.—The daily allotted capacity in gallons of each of the municipalities is as follows:

Newark	4,263,000
Summit	4,227,300
South Orange	3,420,900
Millburn	2,188,200
Irvington	3,372,600
West Orange	3,528,000
Total	21,000,000

The recommendations contained in the report were then taken up seriatim:

Re Mr. Walker.—In accordance with Engineer's request that Joint Meeting concur in his opinion that copy of the contract between El Mora Land Company and Roselle Park be submitted to Joint Body for their examination and approval before same is entered into, a motion to this effect was made, seconded and unanimously carried.

Re Kernan Bill.—On motion, duly seconded, it was ordered that one hundred dollars be paid J. P. Kernan, balance of fifty dollars to be held until Engineer has inspected the work. A vote being taken by roll call resulted, 5 ayes, no nays.

Re DuVivier bill.—Ordered paid. Vote by roll call resulted, 5 ayes, no nays.

The Treasurer's report was then read and ordered placed on file.

The Inspector's report was then read and ordered placed on file.

The Chairman, Mr. Francis Speir, Jr., announced that he expects to sail for Europe on March 5th, 1910, and requested the Board to appoint a Temporary Chairman to act in his absence with full power to sign warrants, call meetings, etc.

Mr. Arthur R. Denman, the representative of the Newark Board of Street and Water Commissioners, was nominated by Mr. O. B. Merrill and seconded by Mr. Aug. Lacombe, to act as Temporary Chairman, and was unanimously elected.

The following resolution was offered by Mr. Merrill and seconded by Mr. Lacombe:

"Resolved, That the several municipalities do raise and pay to the Treasurer of the Joint Meeting the sum of $3,050.00, which shall be assessed upon the joint municipalities in the proportion fixed by the contract between the several municipalities as provided for the care and maintenance of the Joint Sewer, i. e., each municipality paying an equal amount or one-seventh of such assessment (excepting the City of Newark, which shall pay two-sevenths, or one-seventh for Newark and one-seventh for Vailsburg), and, further, that the Secretary be directed to notify the various municipalities of such assessment and the proportion to be paid by each; and be it further

"Resolved, That the said moneys be paid to the Treasurer of the Joint Meeting within twenty days of the 24th day of February, 1910."

This is the assessment for the fourth quarter of 1909 and first quarter of 1910.

A vote being taken by roll call resulted, 5 ayes, no nays. So ordered.

The following bills were then read, audited and ordered paid. A vote by roll call resulting 5 ayes, no nays.

Alexander Potter, January salary	$ 83.33
F. R. Sandford, January salary	131.00
C. W. Sandford, January salary	75.00
Arthur Tepper, petty cash	100.00
Alexander Potter, February salary	83.33
F. R. Sandford, February salary	131.00
C. W. Sandford, February salary	75.00
C. W. Sandford, expense account	8.40
N. Y. Telephone Co.	7.15
Summit Herald	18.00
Adrian Riker	275.00
S. H. Rollinson	20.00

On motion the meeting adjourned.

ARTHUR TEPPER,
Secretary.

Joint Meeting of April 7, 1910.

A meeting of the Joint Meeting was held in South Orange Village Hall, Thursday evening, April 7, 1910.

Present: Acting Chairman A. R. Denman, of Newark; O. B. Merrill, Summit; Max Brodesser, West Orange; F. J. Hill, South Orange, and A. Lacombe, Irvington.

The minutes of last meeting were approved as printed.

The Engineer then read the following report, which on motion duly seconded, was accepted and ordered placed on the minutes:

"April 7, 1910.

"To the Joint Meeting, South Orange, N. J.:

"Gentlemen:—

"I transmit herewith a copy of the ordinance introduced by the Borough of Roselle Park incorporating the contract which has been transmitted to me by our Counsel, Mr. Adrian Riker, with the request that the Joint Meeting take action upon it at the earliest possible moment. In transmitting this copy to me, Mr. Riker advises me that it is in proper form with the possible exception of a difference of opinion as to the amount to be collected for interest, but he advises that in his judgment the Joint Meeting should waive any further rights that they may have in this regard.

"In pursuance of the instructions of the Joint Meeting at its last session, I communicated with the Attorney of El Mora Land Company, which Company is negotiating a contract with the Borough of Roselle Park for a portion of their capacity. As a result of this communication, I had a call from Mr. Walker, who brought with him the contract, but I advised him that I had no authority whatsoever to pass upon the contract, but told him that if he would submit a copy of it to me, I would in turn submit it to your Board. This he has not done.

"There are no other matters excepting general routine that I desire to bring before your Board at this time.

"Yours very truly,

"Alexander Potter."

"Ordinance No. ——.

"An Ordinance to authorize the making of a supplemental contract in behalf of the Borough of Roselle Park in the County of Union and State of New Jersey, between the Township of Millburn, in the County of Essex, the Mayor and Common Council of the City of Newark, the City of Summit, the Town of Irvington, the Town of West Orange, and the Village of South Orange, municipalities of the State of New Jersey, contracting

for the construction and maintenance of a Joint Outlet or Trunk Sewer, by the governing bodies or boards thereof having charge of the construction of sewers in said municipalities, organized in Joint Meeting, party of the first part; and the Borough of Roselle Park, in the County of Union, party of the second part, for the right to increase the discharge from the Borough of Roselle Park in said Joint Outlet or Trunk Sewer.

"Whereas, the municipalities above named, together with the Mayor and Council of the Borough of Vailsburg did enter into a contract dated the 6th day of November, A. D. 1903, whereby there was granted to the Borough of Roselle Park a certain capacity in the Joint Outlet or Trunk Sewer belonging to the other municipalities in said contract named; and

"Whereas, Since the making of said contract the Borough of Vailsburg has been annexed to and become a part of the City of Newark; and

"Whereas, The Joint Meeting has recommended that the said Township of Millburn, in the County of Essex, the Mayor and Common Council of the City of Newark, the City of Summit, Town of Irvington, Town of West Orange, and Village of South Orange do sell and grant to the Borough of Roselle Park additional capacity in said Joint Outlet or Trunk Sewer of five hundred thousand gallons per diem for the sum of seventy-five hundred dollars, and do grant to the said Borough of Roselle Park an option of one year from October 15, 1908, for a further capacity of five hundred thousand gallons per diem at the price of seventy-five hundred dollars; and

"Whereas, The party of the second part has agreed to purchase said additional capacity in said Joint Outlet or Trunk Sewer and pay therefor the price aforesaid, and has also, within the time fixed by said option, elected to exercise its rights thereunder and purchase a further capacity of five hundred thousand gallons per diem at said price of seventy-five hundred dollars,

"Be it Ordained by the Mayor and Council of the Borough of Roselle Park as follows:

"Section 1. That the Mayor of the Borough of Roselle Park and the Borough Clerk are hereby authorized and directed to execute and deliver for and on behalf of the Borough of Roselle Park, in the County of Union, and under its corporate seal the following contract:

"This Agreement, made the day of , A. D. 1910, between the Township of Millburn, in the County of Essex, the Mayor and Common Council of the City of Newark, the City of Summit, the Town of Irvington, the Town of West Orange, and the Village of South Orange, municipalities of the State of New Jersey, contracting for the construction and maintenance of a Joint Outlet or Trunk Sewer by the governing bodies

or boards thereof having charge of the construction of sewers in said municipalities, organized in Joint Meeting, party of the first part, and the Borough of Roselle Park, in the County of Union, party of the second part;

"Witnesseth, That it is agreed between the parties hereto as follows:

"1. The party of the first part hereby grants to the party of the second part, the right to discharge into and through said Joint Outlet or Trunk Sewer, owned, operated and maintained by the party of the first part at the point therein where the Trunk Sewer of the party of the second part now is connected therewith, under a certain contract made between the parties hereto and dated the 6th day of November, A. D. 1903, an additional quantity of fluid matter in the Joint Sewer to the amount of one million (1,000,000) gallons per diem, it being understood that this agreement is not a contract for an average daily discharge into the Trunk Sewer of the party of the first part, but for a maximum flow on any one day of one million three hundred seventy-five thousand (1,375,000) gallons, being the total amount of flowage under the contract of the 6th day of November, 1903, and of this supplement contract.

"2. The whole flow discharged into the said Outlet or Trunk sewer, by the party of the second part, through its connection aforesaid, shall be measured at the point and in the manner and by the method mentioned in the contract heretofore made between the parties hereto and above referred to and to which this is a supplemental contract.

"3. The party of the second part further agrees to pay its proportionate share of the cost of any treatment which may at any time be required or deemed necessary with relation to the whole or any part of the flowage in said Trunk Sewer. The proportion of cost referred to shall be paid on the basis of the actual discharge therein by the party of the second part to that contributed by the party of the first part.

"4. The party of the second part hereby agrees to pay to the party of the first part in consideration for the grant herein made to it by the party of the first part, the sum of fifteen thousand dollars ($15,000) within three months from the date hereof, with interest thereon from the 15th day of October, A. D. 1908.

"In Witness Whereof, The party of the first part have caused these presents to be signed by the Permanent Chairman of the Joint Meeting, attested by its Secretary, and its corporate seal to be hereto affixed, and the party of the second part has caused these presents to be signed by its Mayor, attested by its Clerk, and its corporate seal to be hereto affixed, in duplicate the day and year first above written."

A motion was then made and seconded that the subjects reported on be taken up seriatim. So ordered.

Re Roselle Park.—Mr. Merrill made a motion that the proposed contract with Roselle Park, after being approved by Counsel, be sent to each municipality in the Joint Meeting for its action, recommending that the contract be accepted by each municipality inasmuch as it will not reduce the capacity which any one of the municipalities owns in the Joint Sewer. This motion was duly seconded by Mr. Brodesser, and upon being put to vote was unanimously carried.

The Treasurer's report was read and ordered placed on file.

The Inspector's report was read and ordered placed on file.

The Harrison Construction Company having made request for the payment to them of the balance withheld on the Augusta Street sewer contract amounting to $150.86, a motion was made and duly seconded that the work be approved by the Engineer and in accordance with his certificate that the bill be paid.

J. P. Kernan having made request for the payment to him of the balance withheld on the contract for painting the exposed portion of the iron pipe line, amounting to $50.00, a motion was made and duly seconded that the work be approved by the Engineer and in accordance with his certificate that the bill be paid. A vote being taken by roll call resulted, 5 ayes, no noes.

The following bills were read, audited and upon a vote being taken by roll call were directed to be paid, 5 ayes, no noes:

E. H. DuVivier	$ 2.50
Alexander Potter (March salary)	83.34
F. R. Sandford	131.00
C. W. Sandford	75.00
Arthur Tepper	87.00
S. H. Rollinson	50.00
Summit Herald	7.00
N. Y. Telephone Co.	8.10
Alexander Potter (April salary)	83.33
F. R. Sandford (April salary)	131.00
C. W. Sandford (April salary	75.00

On motion the meeting adjourned.

ARTHUR TEPPER,
Secretary.

Joint Meeting of June 23, 1910.

Regular meeting Thursday evening, June 23d, 1910, held in South Orange Village Hall.

Present: Francis Speir, Chairman; F. J. Hill, of South Orange; Max Brodesser, of West Orange; E. L. Smithers, of Millburn; O. B. Merrill, of Summit, and Aug. Lacombe, of Irvington.

The minutes of last meeting were approved as printed.

The Engineer read the following report, which was accepted and ordered placed on the minutes:

"June 23, 1910.

"To the Joint Meeting, South Orange, N. J.:

"Gentlemen:—The revised report which was ordered printed last Fall has been completed. A number of copies have been sent direct to me, and I have brought to the meeting two copies for each representative. I have given instructions to the printer to send the quota to each member of the Joint Meeting in care of their respective municipal clerks, with the exception of Summit; these have been sent in care of the City Engineer, at Mr. Merrill's request. Of the thousand copies printed, I should like to retain one hundred copies for my own distribution, for which I will be pleased to pay my proportion of the total cost, and should like to have the authority of the Board to retain this number. I have not yet received the bill for the printing, and would recommend that the bill be passed for $225.00, which was the stipulated price to be paid, when the bill has been properly approved by the Chairman and Engineer. In assembling this book, I found that a number of the wood-cuts and three of the half-tones were missing. I therefore ordered the York Printing Company to make new ones. The cost of these, of course, is not included in their bid of $225.00. I have not received a bill for these cuts.

"I hand herewith a bill of Korff Bros., for the large map prepared for insertion in the new reports, amounting to $46.50.

"I also present bill of E. H. DuVivier, for three level recorders, which have been quoted by Mr. DuVivier at $64.00 apiece. Mr. DuVivier formerly quoted us $67.00 apiece. Besides the bill for the gauges, Mr. DuVivier includes bill for 200 charts, at $2.50 a hundred. These gauges will be set by the inspector during the coming week and will replace some of the Dibble gauges which are practically out of commission.

"I also present bill from Queen & Co. for 500 charts for the Dibble recording instruments, amounting to $12.50.

"I submit herewith letters from Mr. Wm. H. Kemp, Chairman of South Orange Township Committee, addressed to the

Chairman of the Joint Meeting, which were referred to me by Mr. Tepper. The first letter is an application for permission to connect with the trunk sewer line at a road just opened and known as the Pierson Road, with a 10-inch main, to serve as an outlet for the Valley View section of South Orange Township. The other letter is an application for permission to connect with the Joint Trunk Sewer line on Stuyvesant Avenue in Union Township with a 12-inch main, as an outlet for a system of laterals in the Hilton district. The authorities of South Orange Township desire ratification by the Joint Meeting of an agreement entered into between South Orange Township and the Towns of Irvington and Union, according them the privilege of using this outlet sewer, such use to be charged against the respective capacities of these towns in the Joint Trunk Sewer. I submit some plans showing the location of the sewers referred to.

"Mr. Tepper also referred to me a letter received from Mr. Smithers, Chairman of the Sewer Committee of Millburn, notifying him that the Township authorities would relieve the Joint Meeting of the care of the wier at the Diamond Mill. I can see no objection to the Township's taking care of this gauge.

"Negotiations have been pending, and your Engineer has been consulted by both Millburn and Summit, concerning a joint sewer on Morris Turnpike. The matter has not been consummated as yet.

"Since the last meeting, Mr. Riker has advised me of a suit brought by Mahlon S. Drake against the municipalities on the East Branch for polluting his ice pond. Mr. Riker advised me to have chemical analyses made of the water above and below the point where the sewer outlet enters the river. I have already had two analyses of water made at a cost of $25.00, and believe that it will be necessary to make further analyses; so would like to have the authorization of the Joint Meeting as to further expenditures for analyses. It is my present belief that three other sets of analyses will give us sufficient data. These six analyses will cost $75.00, and will include a chemical and microscopical examination of the water.

"I present herewith a bill for $4.07 for bottles used for collecting these samples for these analyses.

"We have watched very carefully the operation of the overflow under the bridge, and to the certain knowledge of the Inspector it has not been in operation more than once this year, and then for a brief period of time. There seems to be no question but that at periods of flood the sewer is being less and less taxed, and the number of times that this outlet is brought into play will not exceed once or twice a year, and then only for a few hours. The importance, however, during this time of preventing the backing-up of the flood waters into cellars, cannot be lightly

disregarded. The analyses of the water so far made indicate that the water above the bridge is grossly contaminated; in fact, just about as much so as the water below the bridge where the sewer outlet enters.

"Mr. Riker will present a report upon the status of the Roselle Park matter in person.

"Respectfully submitted,

"ALEXANDER POTTER."

"Maplewood, May 4, 1910.

"Mr. Francis Speir, Chairman Joint Meeting,
"South Orange, N. J.:

"Dear Sir:—Application is hereby made for permission to connect with the Trunk Line Sewer in our Township at a road, just opened and known as the Pierson Road, and on the Pierson property, with a ten-inch main as an outlet for a system of laterals to the Valley View section of this municipality. This connection with the Trunk Line will be against our rights acquired from Millburn and existing contract with South Orange Village.

"Respectfully,

"WILLIAM H. KEMP,
"Chairman Township Committee."

"Maplewood, May 4, 1910.

"Mr. Francis Speir, Chairman Joint Meeting,
"South Orange, N. J.:

"Dear Sir:—Application is hereby made to the Joint Meeting for permission to connect with the Trunk Line Sewer on Stuyvesant Avenue in Union Township with a 12-inch main as an outlet for a system of laterals in the Hilton section of our Township, and to apply against the rights in the Trunk Line which this municipality has acquired from Millburn.

"In obtaining from the Towns of Irvington and Union the necessary rights of way, the privilege has been accorded them of using this same outlet for their own connections as against their own capacity rights in the Trunk Line. It has been assumed by us that such rights exist, but your resolution of permission to this municipality should recognize them to avoid future complications.

"Respectfully,

"WILLIAM H. KEMP,
"Chairman South Orange Township Committee."

"Millburn, May 13, 1910.

"Arthur Tepper, Esq., Secretary Joint Meeting,
"Millburn, N. J.:

"Dear Sir:—The Township Committee have requested me to notify you that it would like to relieve the Joint Meeting of the care of the weir at the Diamond Mill.

"If the Joint Meeting, therefore, has no objection, will you kindly bring the matter up to the proper authorities so that the key may be turned over to our representative, Mr. R. S. Oliver, Inspector.

"Yours very truly,

"E. L. SMITHERS,

"Chairman Sewer Committee."

A motion was made and seconded that the items referred to in the Engineer's report be taken up seriatim. So ordered.

Re Mr. Potter's Request to Retain 100 Copies of New Report.—Motion made and seconded that Mr. Potter be presented with 100 copies. So ordered.

Re York Printing Co. Contract.—Motion made that $225.00, the stipulated price, be paid. Vote by roll call resulted, 5 ayes, no noes. So ordered.

Re Korff Bros. Bill, $46.50 for Map.—Motion made that same be paid. Vote by roll call resulted, 5 ayes, no noes. So ordered.

Re E. H. DuVivier's bill, $197.00.—Motion made that same be paid. Vote by roll call resulted, 5 ayes, no noes. So ordered.

Re Letters from W. H. Kemp.—Motion made and seconded that these be referred to the Engineer for investigation, and that he confer with the representatives from South Orange and Millburn on the subject of the Pierson Street connection, and with the representatives of Millburn and Irvington regarding the Stuyvesant Avenue connection. So ordered.

It was also moved and seconded that the Engineer investigate the uses being made by Union Township of capacity in Joint Sewer, and report to the Joint Meeting. So ordered.

Re Letter from Millburn Township.—Resolved that key of weir at Diamond Mill be turned over to Mr. R. S. Oliver, Inspector for Millburn.

Re Analysis of Water Mahlon S. Drake's Ice Pond.—Motion made and seconded that Engineer be authorized to expend not to exceed $100.00 for this purpose. Vote by roll call resulted, 5 ayes, no noes. So ordered.

Mr. Riker reported as follows:

"Newark, N. J., June 16, 1910.

"The Town of West Orange and the City of Orange are about to exchange capacities in their respective sewers, and the question has been asked me whether it is necessary for the Town of West Orange to have any action taken by the Joint Meeting confirming this exchange. Under the contract every municipality absolutely owns its own share of the capacity in the Joint Sewer, and therefore can deal with it as it sees fit, subject to the general regulations for the use of the sewer. In my opinion no action is necessary by the Joint Meeting, although as a matter of policy the matter might better be submitted and approved at this meeting.

"The other matter for consideration is the contract with Roselle Park. I rather took it for granted that the action of the Joint Meeting at its last session had been communicated to the authorities of Roselle Park, and that the formal actions by way of resolution or ordinance would conform. I find now that the Borough Council has authorized the execution of a contract which does not include the payment of $450 in interest, which was required by the Joint Meeting, and makes no provision for sharing in the expense of sewerage treatment if that shall become necessary hereafter. I have communicated with the attorney for the Borough and stated that these matters must absolutely be incorporated in the agreement. I would suggest that a resolution be adopted authorizing the execution of the contract by the officers of the Joint Meeting, providing these matters are incorporated in the contract."

Mr. S. H. Rollinson, as attorney for the Town of West Orange, asked that a resolution be passed allowing West Orange to dispose of or exchange any part of its capacity to the City of Orange.

Mr. Brodesser offered a resolution that Joint Meeting has no objection to West Orange making exchange with Orange of any part of its capacity in Joint Sewer for a period of five years, subject to the rules of the Joint Meeting. So ordered.

Re Roselle Park.—Counsel presented a proposed form of contract, and a resolution was offered by Mr. Smithers, seconded by Mr. Hill, as follows:

"Resolved, That the officers of the Joint Meeting are hereby authorized and directed to seal and deliver on behalf of the Joint Meeting and of the municipalities represented therein, the contract with the Borough of Roselle Park, substantially in the form submitted at this meeting, provided that said agreement is modified in the following particulars:

"1. That the price to be paid by the Borough of Roselle Park shall be the sum of $15,000, with interest thereon at the rate of 6% per annum from the fifteenth day of October, 1908.

"2. That there shall be added a provision that in case it shall become necessary to purify or treat in any way the sewage discharged through the Joint Sewer before it discharges into the waters of Arthur Kill, said Borough of Roselle Park shall pay its pro rata share of the cost of such purification or treatment, based upon the proportion of its discharge into the said sewer as compared with the total discharge into said sewer."

So ordered.

The following letter was read and referred to Engineer:

"Irvington, N. J., June 21, 1910.

"Joint Sewer Commission,
"Mr. Arthur Tepper, Sec'y,
"Millburn, N. J.:

"Dear Sir:—At the last meeting of the Second Ward Imp. Assn., a complaint was made about the smell from the sewer in Augusta St. between Clinton Ave. and Cottage St.

"The general opinion seems to be that there is something wrong in this block and that it should be remedied, even if the sewer has to be dug up to find the reason and abate the nuisance.

"I was instructed to ask your Honorable Body to investigate this matter at your earliest convenience. Hoping to hear from you, I remain,

"Respectfully yours,
"Hugo R. Winkler,
"Secretary."

Mr. Hugo Winkler, Mr. Sonnenberg and Mr. Julius Bartosch, all of Irvington, were present and addressed the meeting.

Mr. Lacombe brought up a complaint made by Mr. Lawrence, which was referred to the Engineer.

The Treasurer read his report, which was accepted and ordered placed on file.

The Inspector read his report, which was accepted and ordered placed on file, and that table given in report showing depth of flow at weir gauge No. 60 on Bayway, the last one on the line, comparing readings in 1907 with those of 1910, be printed in the minutes:

1907.		1910.	
Jan. 5	1.81	Jan. 7	2.65
Feb. 2	1.58	Feb. 4	1.70
Mch. 2	1.31	Mch. 5	2.00
Apl. 3	1.56	Apl. 1	1.48
May 2	1.55	May 6	1.68
June 4	1.50	June 3	1.40
July 3	1.42	June 9	1.45
Aug. 7	1.28	June 14	2.00
Sept. 7	1.25		
Oct. 11	1.50		
Nov. 10	1.83		
Dec. 6	1.68		

Considering the miles of sewers built and connected with the main line, and the hundreds of house connections added in the past three years, the increases in the readings are very small, bearing our your Chief Engineer's statement, in a report made four years ago, that "in seven years the seepage would seal itself, or 99% of it."

Mr. Sandford also said in his report that June 4th last was the 6th anniversary of his appointment as Chief Inspector, and he wished to thank each member of the Board and the officers for the many courtesies received in that time.

A motion was made and seconded that the Joint Body express their appreciation of Mr. Sandford's faithful and conscientious services. So ordered.

The following communication was read:

"Office of Township Clerk,
"Millburn, New Jersey.

"I, Milton R. Silance, Township Clerk of the Township of Millburn, in the County of Essex and State of New Jersey, *Do Hereby Certify,* that the following annexed is a true copy or transcript from the Records in my office, relating to the cost of maintenance of the Joint Trunk Sewer:

" 'Whereas, A form of contract has been submitted by the Joint Trunk Sewer Commission to the various municipalities interested therein, which, if approved, authorizes the readjustment of the cost of mantenance of the Joint Trunk Sewer.

" 'Whereas, The original contract for the construction of the sewer which has heretofore regulated the proportionate share of such cost has expired by limitation and the contract submitted proposed to increase the percentage of the cost of maintenance fixed as the share for the Township of Millburn, and

"Whereas, In the opinion of the Township Committee of Millburn the share which Millburn ought to contribute should be more nearly in proportion to the capacity allotted to it and therefore its percentage considerably reduced rather than increased. Therefore be it

"'Resolved, That this Committee do hereby disapprove the said contract and decline to authorize its execution. Be it further

"'Resolved, That Mr. E. L. Smithers, Esq., Millburn's representative on the Joint Trunk Sewer Commission, be authorized and directed to so advise the Joint Trunk Commission at its next meeting.

"'Upon motion duly seconded the above resolution was passed.'

"In Testimony Whereof, I have hereunto set my hand and the corporate seal of said Township of Millburn, on this 11th day of June, A. D. 1910.

"MILTON R. SILANCE,
"Township Clerk."

A motion was made and seconded that this be referred to Counsel and that he report to Joint Meeting.

Mr. Merrill then offered the following resolution, seconded by Mr. Lacombe:

"Resolved, That the several municipalities do raise and pay to the Treasurer of the Joint Meeting the sum of $1,525.00, which shall be assessed upon the joint municipalities in the proportion fixed by the contract between the several municipalities as provided for the care and maintenance of the Joint Sewer, i. e., each municipality paying an equal amount or one-seventh of such assessment (excepting the City of Newark, which shall pay two-sevenths, or one-seventh for Newark and one-seventh for Vailsburg), and, further, that the Secretary be directed to notify the various municipalities of such assessment and the proportion to be paid by each; and be it further

"Resolved, That the said moneys be paid to the Treasurer of the Joint Meeting within twenty days of the 23rd day of June, 1910."

This is the assessment for the 2nd quarter of 1910.

A vote being taken by roll call resulted, 5 ayes, no noes.

So ordered.

The Board then went into election of officers for the ensuing year, with the following result:

Chairman—Francis Speir, Jr.
Secretary—Arthur Tepper.
Treasurer—S. H. Rollinson.
Counsel—Adrian Riker.
Chief Engineer—Alexander Potter.
Chief Inspector—F. Ross Sandford.
Assistant Inspector—Corey W. Sandford.

The Auditing Committee, consisting of Messrs. Max Brodesser, Aug. Lacombe and E. L. Smithers, were reappointed.

The following bills were read, audited and upon a vote being taken by roll call, were directed to be paid. 5 ayes, no noes:

Arthur Tepper, petty cash	$100.00
Alexander Potter, May salary	83.35
F. R. Sandford, May salary	131.00
C. W. Sandford, May salary	75.00
F. R. Sandford, sundries	40.24
F. R. Sandford, June salary	131.00
C. W. Sandford, June salary	75.00
Alexander Potter, June salary	83.33
Alexander Potter, sundries	4.07
Summit Herald, printing minutes	7.00
N. Y. Telephone Co.	8.85
E. H. DuVivier, recording gauges	197.00
The York Printing Co., printing report	225.90
Korff Bros. Co., maps	46.50
Queen & Co., charts	12.50
G. Smith	20.00
P. Larney	10.00
S. H. Rollinson	50.00
Arthur Tepper	87.00
Arthur Tepper, petty cash	60.36
Francis Speir, Jr.	10.00
A. R. Denman	10.00
Aug. Lacombe	15.00
F. J. Hill	10.00
O. B. Merrill	15.00
E. L. Smithers	10.00
Max Brodesser	15.00
S. Messerer	10.50

On motion the meeting adjourned.

Arthur Tepper,
Secretary.

Joint Meeting of Ju y 21, 1910.

A special meeting of the Joint Meeting was held in South Orange Village Hall on Thursday evening, July 21, 1910, at 8 o'clock.

Present: Chairman Francis Speir, Jr.; A. R. Denman, of Newark; O. B. Merrill, of Summit; Max Brodesser, of West Orange; E. L. Smithers, of Millburn, and August Lacombe, of Irvington.

The Engineer read the following report, which was accepted and ordered placed on the minutes:

"To the Joint Meeting:

"Gentlemen:—At the last meeting of the Joint Meeting an application was presented by the Township of South Orange, asking the Joint Body to approve of agreements which had been entered into between South Orange Township on the one hand, and Union Township in Union County, and Irvington in the County of Essex, on the other hand, in reference to the sewerage of the Hilton district and an outlet therefor.

"I submit herewith a map of the district in question, and upon this map is delineated the various sections under consideration. This matter was referred to me for report.

"I was requested to investigate the question of whether Union Township had yet reached that capacity of sewage discharge beyond which it was necessary to pay into the Joint Meeting a certain fixed sum of money. I have made such an investigation and find that as yet Union Township has exercised its right to drain into the Joint Trunk Sewer only to the extent of connecting not more than twenty houses; or, in other words, assuming that the average flow from each connection is 500 gallons a day, the total flow from Union Township is about 10,000 gallons. This is far below the amount they can discharge into the sewer before they are required to make the first payment.

"In order to drain the Hilton district, it is necessary for the Township to build sewers beyond the limits of its own territory through Union Township and Irvington. For the privilege of constructing this outlet sewer through their territory, Union Township has been given the right to drain sewage from any houses located within the district shown upon the map; that is to say, for a distance of 500 feet on either side of the streets in which the sewers are constructed through Union Township.

"The Town of Irvington has been given permission to drain

into South Orange Township's outlet sewer the territory shown upon the maps presented herewith.

"South Orange Township pays for the construction of the sewer in Stuyvesant Avenue from Boyden Avenue to the Union County line; Irvington in turn permits South Orange Township to drain the portion of its sewage embracing Springfield Avenue from the Irvington town line to Boyden Avenue, all that portion of Halstead Avenue within the Township, and 300 feet of 44th Street, into Irvington's existing system until such time as South Orange Township builds a sewer through its own territory at such a grade and depth as will permit this section to be sewered through its own territory.

"I can see no valid reason why the Joint Meeting should not approve of the agreements thus entered into, on consideration, however, that special provision be made to see that practically all ground water is eliminated from the system. The agreements with South Orange Township directly affects three of the joint municipalities; namely, South Orange, Millburn and Irvington; and as their quota is exceedingly limited, it is important that every effort be made to postpone the time when it will be necessary for the Joint Meeting and the towns comprising it, to protect themselves from any over-taxing of the system due primarily to the failure of any one of the municipalities benefitted by the enterprise to use such means as is in their power to prevent unnecessary leakage.

"Your Engineer has been authorized by the South Orange Township authorities to prepare specifications and supervise the work, but he is of the opinion that, notwithstanding this fact, the Joint Meeting should put itself on record as requiring the various municipalities using the Joint Trunk Sewer to use the greatest care in the construction of sewers undertaken by them.

"Respectfully submitted,

"Alexander Potter."

Regarding the agreement between Union Township and South Orange Township, Mr. Merrill made a motion as follows, which was duly seconded: that contract as read be submitted to Counsel for approval and written report, and also that he be requested to give Joint Meeting his opinion as to the rights of Union Township in Joint Trunk Sewer, especially with reference to ther disposition or interchange of capacity with other municipalities, and the obligations for the measurement of sewage flow of Union Township. So ordered.

Mr. Denman made a further motion that the proposed contracts referred to be submitted to the Engineer and Counsel for

inspection and report, and that in the meantime the agreement between Irvington and South Orange Township, already approved by Counsel and submitted to the Joint Meeting be retained, awaiting the report above referred to. Motion duly seconded and so ordered. A further motion was duly made and seconded, that Counsel be asked to have annexed a map showing in detail what is intended by contract. So ordered.

Mr. Denman made a motion that a committee of three, consisting of the Chairman, Counsel and Engineer, be appointed to collate and compile all the several laws, rules and regulations, agreements and contracts so far as they may be gathered, and have same printed in pamphlet form (100 copies) as in their discretion shall seem best adapted for use by the Joint Meeting. Motion duly seconded and so ordered.

Mr. Merrill offered the following resolution, which was seconded:

"Resolved, That the Counsel of the Joint Meeting is hereby requested to furnish at the next special meeting a written opinion as to the power of the Joint Meeting under existing laws to build within the territories of the City of Summit and the Township of Millburn and assess benefits for the cost thereof, a lateral to the Joint Trunk Sewer for the joint use only of the said City of Summit and the Township of Millburn and at their joint expense for construction and maintenance."

So ordered.

Mr. Smithers made a motion that the Engineer furnish Millburn Township Committee with the readings of Diamond Mill gauge, and to give them information as to the amount of flow since the last reading so that bill can be rendered. Motion seconded and so ordered. Clerk was directed to notify Engineer of this motion.

On motion the meeting adjourned, subject to the call of the chair.

ARTHUR TEPPER,
Secretary.

Joint Meeting of September 22, 1910.

Regular meeting held in South Orange Village Hall, Thursday evening, September 22, 1910.

Present: Messrs. Speir, Denman, Brodesser, Hill, Smithers, Lacombe and Merrill.

The minutes of the last meeting were approved as printed.

The Engineer read the following report, which was accepted and ordered placed on the minutes:

"To the Joint Meeting:

"Gentlemen:—Since the last meeting there has been little of importance to report to the Joint Commission.

"The matter of printing the Laws, together with the Rules and Regulations of the Joint Meeting, referred to Mr. Riker and myself, was placed in Mr. Riker's hands, and he has attended to the arrangements for placing the work in the hands of the printer. Mr. Riker informs me that they will be ready for distribution within a relatively short time.

"Upon the suggestion of Mr. Riker, I have taken a number of analyses of the water of the Elizabeth River above and below our sewer outlet, in connection with the case of Mahlon S. Drake vs. Newark and other municipalities. The analytical chemist has submitted to me a bill for work in connection with these examinations, amounting to $110.00, which bill is presented herewith, O. K.'d by me. I deemed it wise to have two of these analyses include a bacteriological examination, as well as the chemical and sanitary analysis. The bacteriological examination added to the cost of the analyses $10.00. It is interesting to note from these analyses that the further we travel up the Elizabeth River the worse the water seems to get, proving conclusively that the influence of the sewer upon the water in the river is negligible.

"I enclose a bill from Mr. E. H. DuVivier for regraduating a water level recorder, transforming it from a 2-ft. to a 4-ft. gauge so that we could use one of the new type of gauges to measure the total flow in the sewer at Elizabeth to better advantage. The value of the gauge as changed fully warrants the expense. I recommend the payment of this bill.

"Mr. Sandford, the Inspector, has accumulated a number of old manhole covers which he has removed from the sewers from time to time, replacing them with lock covers and rims from other sections of the sewer. These old rims are imperfect, and to be of service would require the manufacture of special covers in each particular instance, thus adding to their expense

considerably. I would recommend that the Inspector be allowed to sell these old covers for what they will bring for cast iron, as the most economic method of disposing of this surplus material.

"I submit correspondence received from the Board of Education of Union Township, and my recommendation in reference thereto. I should like the concurrence of the Joint Meeting in my recommendation.

"I also submit correspondence in reference to the sewerage capacity affecting Elizabeth and Union Township, and Mr. Riker's conclusion in the matter. Mr. Riker's conclusion is that, whereas a certain territory formerly in Union Township but now in Elizabeth, desires sewerage facilities, the capacity used by this territory is chargeable against Elizabeth's quota and not against the quota of Union Township.

"The matter of the construction of the Hilton section of the South Orange system is still in abeyance, due to the fact that Irvington and South Orange Township have not agreed as to form of contract between them for interchange of space.

"Since the printing of the Joint Sewer Report, there have been many favorable press comments in reference to it. As a result, I have been flooded with requests from city officials for copies of it. Mr. Tepper, some time ago, informed me that he had unearthed several hundred copies of the old edition of the report, and I should like to have the authorization of the Joint Meeting to use these for general distribution.

"Respectfully submitted,

"ALEXANDER POTTER."

It was moved and seconded that the subjects treated on be taken up seriatim. So ordered.

Bill of Oscar W. Palmenberg for water analyses of $110.—Motion made and seconded that same be paid. Vote by roll call resulted, 6 ayes, no noes.

Bill of E. H. DuVivier for regraduating gauge $10.—Motion made and seconded that same be paid. Vote by roll call resulted, 6 ayes, no noes.

Old Manhole Heads.—Motion made and seconded that Chief Inspector F. R. Sandford be authorized to dispose of them according to his best judgment. So ordered.

Board of Education, Union Township.—Motion made and seconded that the Joint Meeting concurs in Engineer's recommendation and suggests that the work be done under supervision of Engineer. So ordered.

City of Elizabeth and Union Township.—The Engineer recommended that the work must be done under the supervision of the Engineer and further that anything done must conform to the rules and regulations of the Joint Meeting. So ordered.

Old Edition of Reports.—The Engineer was authorized to use them as occasion might require.

The report of Chief Inspector was read and ordered placed on file.

Roselle Park Contract.—Copies of an ordinance and contract in duplicate, executed by Roselle Park were submitted for execution by Joint Meeting. It was found, however, upon examination that there were errors in the terms contained therein, and a resolution was offered that the papers be referred to Counsel for correction and then submitted to the Joint Body for action. It was further moved that Mr. Denman act as a committee to take the matter up with Mr. Riker. So ordered.

The following resolution was then offered:

"Resolved, That the several municipalities do raise and pay to the Treasurer of the Joint Meeting the sum of $1,525.00, which shall be assessed upon the joint municipalities in the proportion fixed by the contract between the several municipalities as provided for the care and maintenance of the Joint Sewer, i. e., each municipality paying an equal amount, or one-seventh of such assessment (excepting the City of Newark, which shall pay two-sevenths, or one-seventh for Newark and one-seventh for Vailsburg), and further that the Secretary be directed to notify the various municipalities of such assessment and the proportion to be paid by each; and be it further

"Resolved, That the said moneys be paid to the Treasurer of the Joint Meeting within twenty days of the 22nd day of September, 1910."

This is the assessment for the 3d quarter of 1910.

Upon vote being taken by roll call it was adopted, 6 ayes, no noes.

The question of the advisability of appointing a Vice Chairman of the Joint Meeting was taken up and discussed, and Mr. Lacombe moved that the office of Vice Chairman of the Joint Meeting be created, the Vice Chairman to be selected from among the members of the Board, for the purpose of effecting emergency organization, the Vice Chairman to act in the absence of the Chairman. Seconded by Mr. Brodesser and so ordered.

Mr. Lacombe then nominated Mr. A. R. Denman for the office of Vice Chairman. Mr. Merrill seconded the nomination and a vote being taken Mr. Denman was unanimously elected.

Mr. Denman offered the following resolution:

"That in the matter of lateral sewers and other connections with the Joint Trunk Sewer and the character of the use thereof the matter be referred to Counsel and Engineer of this Board, to suggest a proper bill to conform with the rules and requirements of this body and as experience seems to require, and submit same to this Board at its next meeting with a view to seeking Legislative action thereon."

Motion duly seconded and so ordered.

The following bills were then read, audited and upon a vote being taken by roll call were directed to be paid, 6 ayes no noes:

Arthur Tepper, Sec'y, petty cash on acct. ..	$100.00
Alexander Potter, July salary	83.33
F. R. Sandford, July salary	131.00
C. W. Sandford, July salary	75.00
Arthur Tepper, Sec'y, petty cash on acct. ..	100.00
Alexander Potter, August salary	83.33
F. R. Sandford, August salary	131.00
C. W. Sandford, August salary	75.00
Alexander Potter, September salary	83.33
F. R. Sandford, September salary	131.00
C. W. Sandford, September salary	75.00
Summit Herald, printing minutes	21.00
N. Y. Telephone Co.	12.70
S. H. Rollinson	50.00
Arthur Tepper	87.00

Upon motion the meeting adjourned.

ARTHUR TEPPER,
Secretary.

Joint Meeting of January 26, 1911.

Regular meeting of the Joint Meeting held in South Orange Village Hall, Thursday evening, January 26th, 1911, at 8 o'clock.

Present: A. R. Denman, of Newark, Vice Chairman; F. J. Hill, of South Orange; E. L. Smithers, of Millburn; D. H. Green, of Irvington, and J. J. Kenney, of West Orange.

In the absence of the Chairman, Mr. Denman, the Vice Chairman, presided over the meeting.

The Engineer's report was asked for and Mr. Potter asked that the Inspector's report might be read and discussed first, because, as it was the thirty-fifth anniversary of the wedding day of Inspector F. R. Sandford, it was but natural that he wished to spend the evening at home with the company assembled there. Accordingly the Chief Inspector's report was read, accepted and ordered placed on file and Mr. Sandford received the hearty congratulations of the Board and was excused for the evening.

The Engineer's report was then read and ordered placed on the minutes:

"To the Joint Meeting:

"Gentlemen:—In the matter of Roselle Park's contract for additional space, your Engineer had several conferences with the Engineer from Roselle Park for the purpose of trying to secure an adjustment of the differences between the demands of the Joint Meting as to the payments for the extra space required by Roselle Park and the amount Roselle Park desired to pay. It was impossible to arrange a meeting before the writer had to leave for the West in December. Since his return he has endeavored to arrange for another meeting with the Roselle Park authorities, but as the Mayor and Sewer Committee of last year have relinquished their offices, negotiations must needs be taken up with a new set of officials who are now unfamiliar with the proposition. It has been impossible, therefore, to arrange a meeting, and the matter remains unadjusted.

In reference to South Orange Township's sewer rights in the Joint Trunk Sewer; this municipality submitted to the Joint Meeting contracts entered into between them and the Township of Union. These contracts were discussed in detail at several meetings of the Commission, and as a result of this discussion certain modifications were made therein. Amended contracts have been presented by South Orange Township which have been executed between them and the Township of Union and the Town of Irvington. The Township of South Orange therefore requests that the Joint Meeting will take such action in connection with these contracts as is necessary, and will issue the necessary consents to them granting them permission to connect up with the Joint Trunk Sewer at the points indicated in these contracts.

"The authorities of South Orange Township also made application to the Village of South Orange for the right to

tap the Joint Trunk Sewer at Pierson Avenue in the Township and to allow connections with the sewers draining at this point, to be charged against the contract for connections between South Orange Village and the Township. South Orange Township requests the Joint Meeting for permission to make this connection under the rules and regulations of the Joint Trunk Sewer. The construction of a manhole on Pierson Avenue, making provision for the connection, can be done without injury to the Joint Trunk Sewer.

"The applications referred to above were submitted to me by the Secretary of the Joint Meeting, and reported upon by me in my report under date of June 23, 1910.

"The report of the Chief Inspector will show that the flow in the sewer has been normal and the records of flow compiled from the charts indicate a gradual diminution of the ground water entering the sewer and consequently the increased capacity of the sewer for sewage purposes. This should be pleasing to the Commission as it is to the Engineer.

"I enclose a bill of Queen & Co. for $12.50, approved by me.

"Respectfully submitted,

"ALEXANDER POTTER."

Mr. Sandford had said that the telephone bill rendered the Joint Meeting for the installment in his house, might be rather large, as there had been sickness in the house necessitating the frequent use of the telephone. He offered to pay any excess over the regular bill, but Mr. Smithers made a motion that the Joint Meeting pay the bill in full. Seconded and so ordered.

Mr. Hill made a motion, seconded by Mr. Smithers, that Counsel be requested to communicate with the officials of South Orange Township and indicate to them his opinion of the relation of the Joint Meeting to the proposed contract, and that a duplicate of his communication be sent to the Secretary of the Joint Meeting. So ordered. This motion made to include all of South Orange Township's applications for connections.

Roselle Park.—Mr. Smithers made a motion, duly seconded, that the Chairman be requested to appoint a committee, of which the Chief Engineer shall be a member, to negotiate with Roselle Park authorities the terms of settlement of the differences in controversy between them and the Joint Meeting, and report the same at its next meeting. So ordered.

The report of the Treasurer was read, accepted and ordered placed on file.

The following resolution was then offered:

"Resolved, That the several municipalities do raise and pay to the Treasurer of the Joint Meeting the sum of $3,050.00, which shall be assessed upon the joint municipalities in the proportion fixed by the contract between the several municipalities as provided for the care and maintenance of the Joint Sewer, i. e., each municipality paying an equal amount, or one-seventh of such assessment (excepting the City of Newark, which shall pay two-sevenths, or one-seventh for Newark and one-seventh for Vailsburg), and, further, that the Secretary be directed to notify the various municipalities of such assessment and the proportion to be paid by each; and be it further

"Resolved, That the said moneys be paid to the Treasurer of the Joint Meeting within twenty days of the 26th day of January, 1911."

This is the assessment for the 4th quarter of 1910 and 1st quarter of 1911. A vote by roll call was taken, resulting 5 ayes, no noes.

The Chairman appointed as Auditing Committee, Smithers, Green, Kenney.

The following bills were read, approved and ordered paid. A vote by roll call resulting 5 ayes, no noes:

Alex. Potter, October salary	$ 83.33
F. R. Sandford, October salary	131.00
C. W. Sandford, October salary	75.00
Arthur Tepper, Sec'y, petty cash account	100.00
Alexander Potter, November salary	83.33
F. R. Sandford, November salary	131.00
C. W. Sandford, November salary	75.00
Alex. Potter, December salary	83.33
F. R. Sandford, December salary	131.00
C. W. Sandford, December salary	75.00
Alex. Potter, January salary	83.33
F. R. Sandford, January salary	131.00
C. W. Sandford, January salary	75.00
Adrian Riker	350.00
Arthur Tepper	87.00
S. H. Rollinson	50.00
Francis Speir	10.00
A. R. Denman	15.00
August Lacombe	10.00
Max Brodesser	10.00

F. J. Hill	10.00
E. L. Smithers	15.00
O. B. Merrill	10.00
N. Y. Telephone Company	16.25
Summit Herald	9.00
Queen & Co.	12.50
S. Messerer	8.00
D. H. Green	5.00
J. J. Kenney	5.00
Maher & Flockhart	72.00
York Printing Co.	56.54

The following resolution was offered by Mr. Green and duly seconded:

"Resolved, That the matter of the right of intervention by the Joint Meeting in regulating and supervising matters appertaining to subsidiary contracts, to be entered into between its contracting municipalities and others, be made a subject for amendment by Legislature to the law as at present existing, be referred to Counsel with request that he prepare and introduce a bill to that effect."

So ordered.

On motion the meeting adjourned.

ARTHUR TEPPER,
Secretary.

Joint Meeting of March 9, 1911.

A meeting of the Joint Meeting was held in South Orange Village Hall, Thursday evening, March 9th, 1911, at 8 o'clock.

Present: Chairman Francis Speir, Jr., Messrs. Denman, Kenney, Hill, Smithers and Merrill.

The minutes of the previous meeting were approved as printed.

The Engineer read the following report, which on motion was accepted and ordered placed on the minutes, and that the recommendations therein be taken up seriatim:

"March 9, 1911.

"To the Joint Meeting,
"South Orange, N. J.:

"Gentlemen:—I submit herewith a copy of the ordinance which Roselle Park is now willing to execute, which ordinance

has been submitted to us by the attorney of that Borough. As stated in Mr. O'Connor's letter, this ordinance is in exact accord with the provisions of the contract prepared and approved by the Joint Meeting about a year ago. It seems to me that, as Counsel for Roselle Park has seen fit to submit this back to the Joint Meeting before taking final action upon it, that it is wise for the Joint Meeting to be convened to act formally thereon.

"The Inspector, Mr. Sandford, will have a report in reference to the trouble on Union Avenue with the roots of trees. I suggested to Mr. Sandford, in order to prevent a repetition of this trouble, that he secure permission from the owner of the trees to cut them down, even though it became necessary to compensate the owner for the value of the trees. Mr. Sandford succeeded in getting the owner to accept the sum of $30.00, which I consider to be a very satisfactory agreement to the Joint Meeting, and I would recommend that the action of the Inspector in agreeing to pay for these trees be approved and that a check be drawn to the order of M. Larney for this amount.

"I have also suggested to Mr. Sandford that he raise a certain manhole cover that has been covered up within the Town of Irvington, and as it is clearly within the province of the Town of Irvington to do this themselves, that negotiations be made with the Town for the reimbursement of the Joint Meeting for the money expended for this purpose. There have been two or three similar conditions arising heretofore which have involved the Joint Meeting in probably an expenditure of $20.00 or $30.00, and while each case is relatively small, there is a principle involved which, perhaps, at a later time might cause some question.

"Respectfully submitted,

"Alexander Potter."

Regarding recommendation approving action of Inspector in purchasing trees from Mr. Larney, a motion was made and duly seconded, that Inspector's action be hereby approved and that a check be drawn in favor of Mr. Larney for $30.00. A vote taken by roll call resulted, 5 ayes, no noes. So ordered.

Re Manhole in Irvington.—Motion made and seconded that the Joint Meeting raise the manhole cover at corner of Valley Street and Lenox Avenue to its proper grade and that a bill be sent to Town of Irvington to cover cost of same. So ordered.

The following report was made by the Special Committee, who met with the representatives of Roselle Park, which was accepted and ordered placed on the minutes:

"Report of meeting of Special Committee of Joint Meeting with the representatives of Roselle Park, City Hall, Newark, N. J., February 2nd, 1911:

"Chairman Denman called meeting to order. The three members of the Committee, consisting of Mr. Denman, Mr. Kenney and Mr. Merrill, were present, also Counsel, Mr. Riker, and the Engineer, Mr. Potter. Roselle Park was represented by its Mayor, Counsel and Solicitor.

"Mr. O. B. Merrill was made Secretary of the meeting.

"Mr. O'Connor, Counsel for Roselle Park, then took up the original contract submitted by Roselle Park July, 1910, and the contract as it was revised by the Joint Meeting and returned to them, and objected to some of the changes.

"The first objection was the excluding in the revised contract of the word 'Sewage' in a number of places where is defined capacity. After some discussion and on the advice of Mr. Riker the work 'Sewage' was left in.

"Mr. O'Connor also questioned the clause of the contract in which the total maximum capacity includes both the capacity of the original contract and the capacity of the proposed contract, desiring to separate the two contracts. Mr. Riker advised the Committee to hold to this clause in that it would determine for all future time the question of how capacity should be defined, whether as maximum or average. Any capacity sold to or now held by Roselle Park if any new agreement was entered into should be defined as maximum capacity.

"Mr. O'Connor also desired to change the date from which interest should be charged, bringing it forward to 1909 instead of October, 1908. The Committee could see no reason for granting this change.

"The matter of revising the contract to meet the wishes of the Joint Meeting was left in the hands of Roselle Park to re-submit their proposed ordinance and contract to Mr. Denman, Chairman of the Committee, at an early date, Mr. Denman to reconvene the Committee at some future date to go over this matter.

"Meeting then adjourned.

"Oliver B. Merrill,
"Secretary of the Committee."

Following is a draft of the contract as submitted:

"Ordinance No. ——.

"An Ordinance to authorize the making of a supplemental contract on behalf of the Borough of Roselle Park, in the County of Union and State of New Jersey, between the Township of Millburn, in the County of Essex, the Mayor and Common Council of the City of Newark, the City of Summit, the Town of Irvington, the Town of West Orange and the Village of South Orange, municipalities of the State of New Jersey, contracting for the construction and maintenance of a Joint Outlet or Trunk

Sewer, by the governing bodies or boards thereof having charge of the construction of sewers in said municipalities, organized in Joint Meeting, party of the first part; and the Borough of Roselle Park, in the County of Union, party of the second part, for the right to increase the discharge from the Borough of Roselle Park in said Joint Outlet or Trunk Sewer.

"Whereas, The municipalities above named, together with the Mayor and Council of the Borough of Vailsburg, did enter into a contract dated the 6th day of November, A. D. 1903, whereby there was granted to the Borough of Roselle Park a certain capacity in the Joint Outlet or Trunk Sewer belonging to the other municipalities in said contract named; and

"Whereas, Since the making of the said contract the Borough of Vailsburg has been annexed to and become part of the City of Newark; and

"Whereas, The Joint Meeting has recommended that the said Township of Millburn, in the County of Essex, the Mayor and Common Council of the City of Newark, the City of Summit, Town of Irvington, Town of West Orange and Village of South Orange do sell and grant to the Borough of Roselle Park additional capacity in said Joint Outlet or Trunk Sewer of five hundred thousand gallons per diem for the sum of seventy-five hundred dollars, and do grant to the said Borough of Roselle Park an option of one year from October 15, 1908, for a further capacity of five hundred thousand gallons per diem at the price of seventy-five hundred dollars; and

"Whereas, The party of the second part has agreed to purchase said additional capacity in said Joint Outlet or Trunk Sewer and pay therefor the price aforesaid, and has also, within the time fixed by said option elected to exercise its rights thereunder and purchase a further capacity of five hundred thousand gallons per diem at said price of seventy-five hundred dollars;

"Be it Ordained by the Mayor and Council of the Borough of Roselle Park as follows:

"Section 1. That the Mayor of the Borough of Roselle Park and the Borough Clerk are hereby authorized and directed to execute and deliver for and on behalf of the Borough of Roselle Park, in the County of Union, and under its corporate seal the following contract:

"This Agreement, made the day of , A. D. 1910, between the Township of Millburn, in the County of Essex, the Mayor and Common Council of the City of Newark, the City of Summit, the Town of Irvington, the Town of West Orange and the Village of South Orange, municipalities of the State of New Jersey, contracting for the construction and maintenance of a Joint Outlet or Trunk Sewer by the governing bodies or boards thereof having charge of the construction of sewers in

said municipalities, organized in Joint Meeting, party of the first part, and the Borough of Roselle Park, in the County of Union, party of the second part;

"Witnesseth, That it is agreed between the parties hereto as follows:

"1. The party of the first part hereby grants to the party of the second part, the right to discharge into and through said Joint Outlet or Trunk Sewer, owned, operated and maintained by the party of the first part at the point therein where the trunk sewer of the party of the second part now is connected therewith, under a certain contract made between the parties hereto and dated the 6th day of November, A. D. 1903, an additional quantity of fluid matter in the Joint Sewer to the amount of one million (1,000,000) gallons per diem, it being understood that this agreement is not a contract for an average daily discharge into the trunk sewer of the party of the first part, but for a maximum flow on any one day of one million three hundred seventy-five thousand (1,375,000) gallons, being the total amount of flowage under the contract of the 6th day of November, 1903, and of this supplemental contract.

"2. The whole flow discharged into the said Outlet or Trunk sewer, by the party of the second part, through its connection aforesaid, shall be measured at the point and in the manner and by the method mentioned in the contract heretofore made between the parties hereto and above referred to and to which this is a supplemental contract.

"3. The party of the second part further agrees to pay its proportionate share of the cost of any treatment which may at any time be required or deemed necessary with relation to the whole or any part of the flowage in said trunk sewer. The proportion of cost referred to shall be paid on the basis of the actual discharge therein by the party of the second part to that contributed by the party of the first part.

"4. The party of the second part hereby agrees to pay to the party of the first part in consideration for the grant herein made to it by the party of the first part, the sum of fifteen thousand dollars ($15,000) within three months from the date hereof, with interest thereon from the 15th day of October, A. D. 1908.

"In Witness Whereof, the parties of the first part have caused these presents to be signed by the Permanent Chairman of the Joint Meeting, attested by its Secretary, and its corporate seal to be hereunto affixed, and the party of the second part has caused these presents to be signed by its Mayor, attested by its Clerk, and its corporate seal to be hereto affixed, in duplicate the day and year first above written."

A motion was made and seconded that this draft be compared with the one printed in minutes of April 7, 1910. So Joint Meeting and, after the contract has been approved by each ordered.

This was done and the copies found to be identical.

A motion was made that this contract, as read be approved by municipality, it be duly executed by the Chairman and Secretary, and be delivered upon receipt of price as fixed in the contract, together with interest as therein provided for. So ordered.

A motion was made that Mr. Riker's opinion as to what disposition is to be made of the proceeds should be obtained and forwarded to each of the various municipalities, with a copy of the proposed contract, and action and notice thereof be requested forthwith. So ordered.

The Inspector's report was read, accepted and ordered placed on file.

A motion was made that the Treasurer be requested to be present at each meeting with a report as to the financial conditions, and the Secretary was directed to write him to that effect. Seconded and so ordered.

A motion was made that the Auditing Committee arrange to audit the books of Treasurer and Secretary. Seconded and so ordered.

The following bills were read and ordered paid when approved by the Auditing Committee. A vote by roll call resulted, 5 ayes, no noes:

Alex. Potter (February salary)	$ 83.33
F. R. Sandford (February salary)	131.00
C. W. Sandford (February salary)	75.00
Arthur Tepper (petty cash)	100.00
Arthur Tepper (petty cash)	100.00
F. R. Sandford (expense account)	35.84
L. Bamberger & Co.	18.00
Harold L. Bond Co.	49.50
Summit Herald	9.00
S. H. Rollinson	50.00
Arthur Tepper	87.00

On motion the meeting adjourned.

ARTHUR TEPPER,
Secretary.

Joint Meeting of April 13, 1911.

A special meeting of the Joint Meeting was held in South Orange Village Hall, Thursday evening, April 13th, 1911, at 8 o'clock.

Present: A. R. Denman, F. J. Hill, J. J. Kenney, O. B. Merrill, E. L. Smithers. Mr. Francis Speir, Chairman.

In the absence of the Secretary, Mr. E. L. Smithers acted as Secretary of the meeting.

The Chairman stated that the meeting was called at the instigation of Mr. Merrill, of Summit, with whom he had had some correspondence in regard to the Roselle Park contract. The following letters were presented and read at the meeting:

"March 22, 1911.

"Mr. Francis Speir, Jr.,
"52 Wall Street, New York City:
"Dear Mr. Speir:—

"The proposed agreement with the Borough of Roselle Park was handed to me last night before the Council meeting on my return from a short absence. I had expected to pass the resolution which accompanied the same approving of the recommendation of the Joint Meeting, and authorizing the Chairman and Secretary of the Joint Meeting to execute and deliver the contract to the Borough of Roselle Park on behalf of Summit, but in reading over the opinion of Mr. Riker in regard to the distribution of the moneys paid by Roselle Park, he states in the third paragraph of this letter as follows:

"'Inasmuch as all the municipalities are uniting in this sale it must be assumed that the capacity of each is to be proportionally reduced by the amount sold to the Borough of Roselle Park.'

"This is entirely at variance with the understanding I had of the effect of the sale of this capacity to the Borough of Roselle Park. You will remember this matter was brought up by me two or three times, and the statement was made that owing to the physical condition of the sewer at the point of entry by Roselle Park the owned capacity of each one of the municipalities would not be affected by this sale.

"Was Mr. Riker unfamiliar with this situation at the time of writing this opinion, or was this taken into consideration? I doubt very much whether the City of Summit would be willing to sell any of its capacity or enter into any agreement which would reduce the amount of its capacity.

"Very truly yours,
"Oliver B. Merrill,
"Chairman Sewer and Drainage Committee."

"March 25, 1911.

"My Dear Mr. Merrill:—

"I have your favor of March 24th.

"I take the extract from Mr. Riker's opinion quoted in your letter to mean just what he says. If the sale to the Borough of Roselle Park goes through, each of the joint municipalities parts with some of the capacity it owns in the Joint Trunk Sewer. It does not part with any capacity, however, until it comes to the present Roselle Park intake. From the Roselle Park intake to Staten Island Sound we all own more than we possibly could use, if each town was using its full capacity. This situation arose partly because we had planned for Elizabeth's needs under our contract and partly because the Engineer thought it good policy to have a surplus over and above all our needs that could be sold in times to communities that would spring up in Union County near Elizabeth and who would desire to purchase it in the near future. This is what Roselle Park did and is now trying to do on a larger scale. The total capacity of the aggregate ownership of the space in the Joint Trunk Sewer amounts to 21,000,000 gallons a day. Of this the City of Summit owns 4,227,300 gallons or 22.08 per cent. If the full 21,000,000 gallons flows in the sewer at the Roselle Park intake, there is this extra space between that point and Staten Island Sound that is of no more use to any of us than would be capacity in the new Bronx sewer that is being built in Westchester County. We can sell the extra capacity in our sewer, as we probably could sell capacity, if we owned it, in the Bronx sewer. Therefore, while we are all disposing of capacity, we are disposing of capacity that we own over and above our holdings of 21,000,000 gallons daily.

"In conclusion, I do not see how the City of Summit, or any other municipality, could possibly be injured by entering into the Roselle Park contract. It does not sell a gallon of its 4,227,300 gallons daily capacity, but keeps that absolutely intact.

"Mr. Potter has gone into the matter from an engineering standpoint and can make the physical conditions much clearer than I can.

"Very truly yours,

"Francis Speir.

"Oliver B. Merrill, Esq.,
"Chairman Sewer and Drainage Committee,
"Summit, N. J."

"March 27, 1911.

"Mr. Francis Speir,
"52 Wall Street,
"New York City:

"Dear Mr. Speir:—

"Enclosed find a letter to the Joint Meeting on the Roselle Park contract matter. I have mailed a copy of same to Mr. Merrill.

"If you have any suggestions in reference to this letter, to make it clearer for the municipal bodies, kindly advise me.

"Yours very truly,

"Alexander Potter."

"March 27, 1911.

"Joint Meeting, South Orange, N. J.:

"Gentlemen:—At the request of the Chairman, Mr. Speir, I submit the following report in reference to capacities each contracting municipality has in the Joint Trunk Sewer, and how these capacities will be affected by the proposed agreement with Roselle Park:

"On October 3, 1904, the writer submitted a report to the Joint Meeting, a copy of which is annexed hereto.

"Column C of this report gives the capacity each of the joint contracting municipalities have in this sewer.

"From this report it will be seen that the capacity of this Joint Trunk Sewer below the point where Roselle Park enters is 1,650,680 gallons greater than the allotments of each of the respective municipalities; but of this amount 748,000 gallons have been reserved for the City of Elizabeth; 375,000 gallons have already been sold to Roselle Park, and 187,500 gallons reserved for Union Township, leaving a capacity of 305,108 gallons which could be disposed of without in any way affecting the interests of the various municipalities contracting for the joint sewer.

"It will be seen from this statement that the total capacity for all of the contracting municipalities, based upon their original allotment plus the increase in the size of the sewer made for the benefit of Morristown which was not used by them, is 20,169,900 gallons.

"On the other hand, from actual measurements of the capacity of the sewer at the Elizabeth line, we find that instead of this sewer at this point having a capacity of 20,169,900 it actually has a capacity of 21,000,000 gallons; or, in other words, a capacity of 830,100 gallons greater than was actually assumed when the sewer was designed.

"This same ratio of increase is not found to exist through all the various branches of the Joint Trunk Sewer above the Elizabeth line, so that the constituent members of the Joint Trunk Sewer have a capacity at the Elizabeth line of over 800,000 gallons, which they cannot make use of higher up. The 830,000 gallons coupled with the 305,180 gallons referred to in my report of October 3, 1904, makes a total of 1,133,000 gallons which you have available to sell to Roselle Park, but which is not available to sell to municipalities near at home.

"The gaugings and velocities upon which the actual capacity of the sewer has been determined have been taken now for a number of years and can be considered reasonably reliable.

"Respectfully submitted,

"ALEXANDER POTTER."

"*Minutes from Joint Meeting held February* 9, 1905.

"October 3, 1904.

"Joint Meeting, South Orange, N. J.:

"Gentlemen:—As requested, I have prepared the following statement in reference to the increased capacity available for the various municipalities over that quantity which was set down in the original contract between the municipalities. Also a report upon the ability of the various municipalities to dispose of additional capacity to Roselle Park without injury to their interests.

"First, in reference to Roselle Park: The capacity of the Joint Sewer below Roselle Park is 1,615,680 gallons greater than the capacity above Roselle Park. Against this capacity there is to be charged 748,000 gallons which is reserved for the City of Elizabeth, 375,000 gallons per day which is already sold to the Borough of Roselle Park and 187,500 gallons per day reserved for Union Township. The balance of Union Township's allotment in the Joint Sewer will in all probability be admitted above the City of Elizabeth.

"We have, therefore, a capacity of 305,180 gallons per day which can be disposed of without in any way affecting the interests of the various municipalities contracting for the Joint Sewer, and of which they cannot avail themselves. The capacity of the Joint Sewer above the City of Elizabeth available for the use of the various municipalities after deducting the 175,000 gallons reserved for Union Township, is 20,169,900 gallons.

"The statement of the various capacities retained by contract in the Joint Sewer by the different municipalities is set out in Column A of the following table, and amounts to 14,904,000 gallons, leaving a reserved capacity to be allotted between the various contracting municipalities in proportion to their present holdings of 5,266,000 gallons.

"The additional capacity apportioned to each municipality is found in Column B.

"Column C gives the total capacity for each municipality and shows an increase in the capacity of each municipality of 34 per cent. over their original holdings:

	A	B	C	D
Summit	3,000,000	1,060,000	4,060,000	406,000
West Orange	2,504,300	884,700	3,389,000	339,000
South Orange	2,427,900	857,800	3,285,700	329,000
Irvington	2,394,100	845,700	3,239,800	324,000
Millburn	1,553,000	548,800	2,101,800	210,000
Newark	1,480,100	522,900	2,003,000	200,000
Vailsburg	1,544,600	546,000	2,090,600	209,000
	14,904,000	5,265,900	20,169,900	2,016,000

"Morristown and adjacent intervening municipalities have, in their preliminary talks, expressed a desire to purchase a control of about 3,250,000 gallons per day of this surplus capacity. If you should finally decide to dispose of this capacity to these towns lying beyond Summit, each municipality would still have a surplus in Column D over their contract holdings.

"Respectfully submitted,

"ALEXANDER POTTER."

"Francis Speir, Esq.,

"Chairman Joint Meeting,

"New York City:

"Dear Mr. Speir:—After my talk with you relative to the sale of capacity to Roselle Park I called on Mr. Potter, and he found the report of October 3, 1904, addressed to the Joint Meeting, which report showed that at the point where Roselle Park enters, the capacity of the sewer was 1,650,680 gallons greater than the total allotment of the respective municipalities, but that of this amount 748,000 gallons had been reserved for the City of Elizabeth, 375,000 gallons sold to Roselle Park, and 187,500 gallons reserved for Union Township, leaving a capacity of only 305,108 gallons which could be disposed of without affecting the interests of the various municipalities in the Joint Sewer.

"He has just sent me a copy of the letter which he has addressed to the Joint Meeting in which he includes this statement, but also states that the total capacity of all the contracting municipalities in their original allotment, plus the increase in size of the sewer for the benefit of Morristown which was not used by them, is 20,169,900 gallons. Taking the measurement of the sewer at the Elizabeth line as 21,000,000 gallons, and the total capacity of the municipalities as 20,169,900 gallons he shows a capacity of 830,100 gallons greater than was actually assumed when the sewer was designed. He also states that this ratio of increase is not found to exist throughout all the various

branches of the Joint Trunk Sewer above the Elizabeth line, so that the constituent members of the Joint Trunk Sewer have a capacity at the Elizabeth line of over 800,000 gallons which they cannot make use of higher up. By adding the 830,000 gallons and the 305,108 gallons referred to in the report of October 3, 1904, he makes a total of 1,133,000 gallons available now to sell to Roselle Park, and not available to sell by municipalities nearer home.

"I am free to confess that I am not as yet convinced that the sale of this capacity to Roselle Park by the Joint Meeting will not affect the actual capacity of each one of the municipalities, for on page No. 84 of the Joint Sewer Report 21,000,000 gallons is given as the total in the main trunk sewer, with Summit's proportion 4,227,300 gallons. In the West branch, main stem, Summit has 4,227,300 gallons, and in the West branch Summit-Millburn division 4,227,300 gallons, thus showing that Summit has its proportion of the 21,000,000 up to its line. The same seems to be true of the figures opposite each of the other municipalities in this table.

"Of course I understand that these figures are approximate, and what we really have is a certain percentage of the total capacity, yet it seems to me that this arrangement with Roselle Park would take from Summit's capacity, which it owns and can use, about 125,000 gallons. Summit is exceedingly chary about selling any capacity, and I doubt very much whether they would sell it for any consideration.

"I shall be glad to be convinced if I am wrong in my deductions, and if you think it wise it might be well to have a meeting of the Joint Meeting, and discuss this matter.

"Very truly yours,

"Oliver B. Merrill."

"April 4, 1911.

"My Dear Mr. Merrill:—

"I have your favor of March 28th, addressed to me as Chairman of the Joint Meeting.

"With regard to your suggestion of taking up the Roselle Park matter again at the Joint Meeting, I consider it wise, and hoped to arrange to call a meeting for this week, but was unable to do so. I shall communicate with Mr. Potter and if his engagements permit, suggest a meeting for Thursday, April 13th. If he should be away then, I think it wiser not to hold the meeting until he is here. If Mr. Potter can be here on that day, the Secretary will issue the usual call.

"Very truly yours,

"Francis Speir.

"P. S.—I enclose a copy of my letter to Mr. Potter."

"April 4, 1911.

"My Dear Mr. Potter:—

"I have received a letter from Mr. Merrill, of which I enclose a copy, with regard to the proposed sale to Roselle Park. He feels that while on page 84 of the Joint Trunk Sewer report 21,000,000 gallons is given as the capacity of which Summit's proportion is 4,227,300 in each of the divisions, the proposed sale to Roselle Park would deprive Summit of about 125,000 capacity in the whole sewer.

"I have replied that I would approve of a meeting of the Joint Trunk Sewer to discuss this question, on April 13th, provided you could be there; if you cannot be there then, at the first opportunity you can. If you can be there on the 13th, will you be prepared to demonstrate to the satisfaction of all the municipalities that if the sale to Roselle Park is made it will not be a sale of any of the capacity of each that can possibly be used by that municipality? This I understood from you, and this is the position I have always taken. Will you kindly notify Mr. Tepper to get out notices of the meeting as soon as possible?

"Very truly yours,

"Francis Speir.

"Alexander Potter, Esq.,
"116 Liberty Street."

The report of Mr. Potter, taken from the minutes of the Joint Meeting held February 9, 1905, was also referred to.

Mr. Potter then presented the following report:

"April 13, 1911.

"To the Joint Meeting:

"Gentlemen:—Before recommending the granting of the additional space to Roselle Park of 1,000,000 gallons per day, the representatives of some of the municipalities in the Joint Trunk Sewer very properly desire to have conclusive proof that the Joint Trunk Sewer below the point of entry of the Roselle Park sewer has in fact sufficient additional carrying capacity to justify the Joint Meeting in signing this contract without in any way interfering with the ability of the constituent members of the Joint Trunk Sewer to make use of this extra space nearer home.

"On October 3, 1904, I reported that the capacity of the Joint Trunk Sewer below Roselle Park was 1,615,680 gallons greater than the capacity above Roselle Park. If the capacity of the Joint Trunk Sewer below Roselle Park to the outlet was uniform, then against this capacity must be charged the 748,000 gallons per day reserved for Elizabeth; the 375,000 gallons a day already sold to the Borough of Roselle Park, and the 375,000 gallons reserved for Union Township; or, in other words, the Joint Meeting has already contracted for 1,498,000 gallons of this reserve capacity. The City of Elizabeth, however, has taken its

allotment uniformly along the entire length of the sewer for a distance of three miles from the outlet of the sewer practically to the point where Roselle Park discharges its sewage. This means that the point where Roselle Park enters the Joint Trunk Sewer, the actual capacity needed to be reserved for Elizabeth is not more than 50,000 gallons.

"From observations made of the flow in the sewer just above Roselle Park, we find that the capacity of the sewer is 21,000,000 gallons, while the capacity two miles further up the line is only 20,169,900, which amount is the greatest amount that the towns comprising the Joint Meeting can contribute to the sewer without surcharging it. The difference between 21,000,000 actual capacity at the Roselle Park line and the amount available for the constituent members of the Joint Trunk Sewer is 840,100, which, added to the 800,000 extra capacity unappropriated below Roselle Park, gives a total capacity which can be disposed of without injury to the Joint Meeting, of 1,640,000.

"In order to remove any doubt as to the ability of the Joint Meeting to grant Roselle Park this extra space without in any way interfering with their own ability to use the sewer above, it must be borne in mind that the true carrying capacity of the Joint Trunk Sewer below Roselle Park must be determined not by any short section of a limiting grade, but by the difference of elevation between the end of the sewer and the elevation of the sewer at Roselle Park, divided by the distance between these two points. Calculating the capacity of the sewer in this way, we find that at the lower end of the 42-inch sewer the elevation is —.36, and at the manhole below Roselle Park it is 23.02. The distance between these two points is 11,718 feet; or, in other words, a grade of practically 0.2 of a foot per hundred. A sewer upon this grade will discharge 25,200,000 gallons per day; or, in other words, an excess capacity over all other allotments of 3,331,000 gallons.

"The only effect in discharging this additional capacity through this portion of the sewer would be the building up of a head on those portions of the sewer below Roselle Park where the grade is not sufficient to discharge this quantity without surcharge.

"The additional 1,000,000 gallons asked for by Roselle Park is not sufficient, in addition to the quantity which the Joint Trunk Sewer sends down to this point, to surcharge this sewer detrimentally, for the sewer is sufficiently deep along the major portion of this line to prevent any slight backing up of the sewage from doing any injury. At no point will this quantity surcharge the sewer more than one foot.

"The profile of the First Section of the Joint Trunk Sewer is submitted herewith to substantiate this statement, and I would suggest that copies of this profile be given to any of the con-

stituent municipalities in the Joint Trunk Sewer who may desire to have backing for their action in voting to grant this additional capacity to Roselle Park.

"I present herewith the contracts and rules and regulations governing the Joint Trunk Sewer which Mr. Riker and myself were authorized to prepare for printing, and submit herewith the bill of the York Printing Company for this work, who gave the lowest bid upon the Joint Trunk Sewer Report prepared last year.

"Respectfully submitted,

"ALEXANDER POTTER."

After discission on the matter the following resolution was offered, duly seconded and adopted:

"Whereas, The report of the Engineer bearing date April 13, 1911, together with the profile of the first section of the Joint Trunk Sewer shows a sewer capacity at the manhole, above the Roselle Park intake, of 21,000,000 gallons and of 25,200,000 gallons at the manhole below the said intake, now be it

"Resolved, That a copy of the said report and of the said profile, which shall show said sewer capacity in gallons, be sent to each of the municipalities parties to said Joint Meeting."

The Treasurer presented his report to date, which was accepted and ordered placed on file.

On motion of Mr. Denman, duly seconded, it was

"Resolved, That the Treasurer be directed to prepare his reports by itemizing his Receipts and Disbursements, as to date, amounts, from whom received and to whom paid, and that the Treasurer's reports when from time to time so submitted be incorporated in the printed minutes of the Joint Meeting."

Adopted.

On motion, duly seconded, it was

"Resolved, That the Orange National Bank be requested to transfer the amount standing to the credit of Mr. William Rollinson, former Treasurer of the Joint Meeting, to Mr. S. H. Rollinson, the present Treasurer."

Adopted.

On motion, duly seconded, it was

"Resolved, That the Engineer be directed to forward the balance of the printed copies of the Rules and Regulations, Contracts, etc., after taking the number necessary for himself, Counsel, etc., in equal proportions to the various municipalities parties to the Joint Meeting."

Adopted.

The following bills were read and ordered paid when approved by the Auditing Committee. A vote by roll call resulted in 5 ayes, no noes:

The York Printing Company ..... $ 2.25
The York Printing Company 138.00

On motion the meeting adjourned.

"E. L. SMITHERS,"
Secretary pro tem.

Joint Meeting of June 15, 1911.

The annual meeting of the Joint Meeting was held in South Orange Village Hall, Thursday evening, June 15th, 1911, at 8 o'clock.

Present: Francis Speir, Jr., Chairman; A. R. Denman, Newark; D. H. Greene, Irvington; J. J. Kenney, West Orange; E. S. Allen, South Orange; E. L. Smithers, Millburn, and O. B. Merrill, Summit.

The minutes of the previous meeting were approved as printed.

The Engineer read the following report, which was accepted and ordered placed on the minutes:

"June 15th, 1911.

"To the Joint Meeting,
"South Orange, New Jersey:
"Gentlemen:—

"Last month I was notified by Mr. Riker that the Drake case against the Joint Meeting was set down for the first of June, and that it was necessary for me to assist him in the preparation of a substantial defense. It became necessary, therefore, to make additional water analyses showing the character of the water above and below the Lyons Avenue bridge. The cost of these analyses is $37.57, and the bill therefore is presented herewith with my O. K. I might state, however, that this case did not come to trial as anticipated by Mr. Riker because of the serious illness of the plaintiff. It has gone over until the September term.

"On May 27th, I received the following letter from Mr. Edward S. Rankin, Engineer of Sewers and Drainage, Newark:

" 'City Hall, Newark, N. J., May 27th, 1911.

" 'Mr. Alex. Potter,
" '114 Liberty Street,
" 'New York City.

" 'Dear Sir:——

" 'The Vailsburg Drainage Scheme is still held up pending contract with East Orange and securing rights of way. In the meantime we are having numerous complaints from the corner of 16th Avenue and South 20th Street, where there is no way of

draining the surface water. Would it be possible for us to make a temporary connection at this point with the Joint Outlet Sewer so as to relieve the situation until we can get the storm water system installed?

"'Very truly yours,

"'EDWARD S. RANKIN,

"'Engineer, Sewers and Drainage.'

"I replied to Mr. Rankin that I would present this matter to the Joint Meeting at its next regular meeting for their consideration. In the meantime, I have conferred with Mr. Riker and have looked over the situation personally. From a legal standpoint, Mr. Riker is of the opinion that any action taken by the Joint Meeting that would tend to aggravate the conditions from which Drake seeks relief, might affect the judgment of the Court when the case comes to trial. As the discharge of surface water into the sewer would unquestionably increase the number of times when the outlet at Lyons Avenue would come into play, the Joint Meeting should take this fact into consideration when acting upon the request made by Mr. Rankin.

"It is in this general vicinity where water from the street passes down through the pit of the car barn into one of the branches of the Joint Trunk Sewer. In my judgment, the granting of this permit would, perhaps, increase the tendency to surcharge the sewer two or three times as frequently as under present conditions.

"The objection to affording relief to this district is that it would at once remove the influence of and urging from the people of the section so much in need of relief which can only be permanently secured by the construction of a storm water sewer, which has been under consideration for so long a time, and this might have the effect of prolonging the time when this matter will be finally executed.

"The Joint Meeting must also remember that we were peremptorily ordered to close up the overflow under the Lyons Avenue bridge, but were granted an extension of time because of your Engineer's statement to the State Health authorities that the need of this outlet would be done away with when this storm sewer was constructed, and I informed the Board that in my opinion relief would be had by the construction of the sewer before this date.

"The Inspector's report will show you that the entire sewer showed up in excellent condition during the recent heavy downpour of rain, and that at no part of the line was there any condition of serious backing-up in the sewer. It will also show that the measures of relief which have been undertaken at Brookdale Avenue and Augusta Street have been effective.

"Since the last meeting, the Township of South Orange has started the construction of sewers in the Hilton district. Sewers

are also being constructed in the Maplewood district. The greatest possible care is being exercised in the construction of these sewers to exclude all ground-water, and from the results so far noted, ground-water will be practically excluded from the sewers.

"The Secretary has informed me that all municipalities with the exception of West Orange and South Orange Village have passed and returned the agreements with Roselle Park.

"Respectfully submitted,

"ALEXANDER POTTER."

The Treasurer presented a report which gave in detail the moneys received and disbursed since the last meeting. The report was ordered placed on file and the Treasurer was thanked for his cheerful compliance with the request for the detailed report.

The Auditing Committee reported progress with regard to auditing of Treasurer's and Secretary's books.

Upon motion, duly seconded, the Auditing Committee were empowered to employ an accountant to audit the books of Secretary and Treasurer for the maintenance period of the Joint Sewer, at a cost not to exceed $100.00.

The Inspector presented a report, which was read, accepted and ordered placed on file.

The following resolution was offered and, upon being put to vote, was unanimously adopted—6 ayes, no noes:

"Resolved, That the several municipalities do raise and pay to the Treasurer of the Joint Meeting the sum of $3,050.00, which shall be assessed upon the joint municipalities in the proportion fixed by the contract between the several municipalities as provided for the care and maintenance of the Joint Sewer, i. e., each municipality paying an equal amount, or one-seventh of such assessment (excepting the City of Newark, which shall pay two-sevenths, or one-seventh for Newark and one-seventh for Vailsburg), and further that the Secretary be directed to notify the various municipalities of such assessment and the proportion to be paid by each; and be it further

"Resolved, That the said moneys be paid to the Treasurer of the Joint Meeting within twenty days of the 15th day of June, 1911."

This is the assessment for the 2nd and 3rd quarter of 1911.

The Board then went into election of officers for the ensuing year, and the following gentlemen were unanimously elected—compensations to be the same as for the past year:

Chairman—Francis Speir, Jr.
Vice-Chairman—A. R. Denman.
Chief Engineer—Alexander Potter.
Counsel—Adrian Riker.
Treasurer—S. H. Rollinson.
Secretary—Arthur Tepper.
Chief Inspector—F. Ross Sandford.
Assistant Inspector—Corey W. Sandford.

Messrs. Greene, Kenney and Allen were appointed Auditing Committee for the year.

Mr. Merrill made a motion, which was duly seconded, that the Chairman be appointed a committee of one to prepare a report showing what he considers a proper division of maintenance expenses, considering the views expressed at this meeting, and that the Chairman be requested in his discretion to interview any of the various officials of the different municipalities in relation to the matter. So ordered.

The following bills were read, approved and ordered paid—voting being 5 ayes, no noes:

Alexander Potter, March salary	$ 83.34
F. R. Sandford, March salary	131.00
C. W. Sandford, March salary	75.00
Arthur Tepper, petty cash	100.00
Alexander Potter, April salary	83.34
F. R. Sandford, April salary	131.00
C. W. Sandford, April salary	75.00
Alexander Potter, May salary	83.34
F. R. Sandford, May salary	131.00
C. W. Sandford, May salary	75.00
O. A. Dolun	12.50
O. W. Palmerberg	37.50
New York Telephone Company	24.20
H. S. Fish	2.00
Summit Herald	27.00
F. Speir	15.00
A. R. Denman	20.00
F. J. Hill	10.00
D. H. Greene	10.00
O. B. Merrill	20.00
J. J. Kenney	25.00
E. L. Smithers	20.00
S. H. Rollinson	50.00
S. H. Rollinson, premium on bond	20.00

Arthur Tepper	87.00
C. W. Sandford, expense account	7.20
F. R. Sandford	6.55
Patrick Larney	10.00
Gilbert Smith	20.00
Alexander Potter, June salary	83.34
F. R. Sandford, June salary	131.00
C. W. Sandford, June salary	75.00
Secretary, petty cash account	81.91

On motion the meeting adjourned.

ARTHUR TEPPER,
Secretary.

Joint Meeting of October 26, 1911.

Regular meeting of the Joint Meeting held in South Orange Village Hall, Thursday evening, October 26th, 1911.

Present: Francis Speir, Chairman; Messrs. Denman, of Newark; Greene, of Irvington; Allen, of South Orange; Kenney, of West Orange; Smithers, of Millburn, and Merrill, of Summit.

The minutes of the previous meeting were approved as printed.

The Engineer read the following report, which was accepted and ordered printed in the minutes:

"October 26, 1911.

"To the Joint Meeting:

"Gentlemen:—

Re Roselle Park.—Ordinances having been passed by all the jointly contracting municipalities agreeing to the sale of space in the lower end of the Joint Trunk Sewer to the Borough of Roselle Park, contracts can be entered into between the Joint Meeting and that Borough and the payment of the agreed price made by Roselle Park. The agreement with Roselle Park calls for the sale of 1,000,000 gallons capacity per day maximum flow for $15,000 and interest from the 15th of October, 1908, until the date of payment. As under the agreement Roselle Park has three months to pay this money after the signing of the agreement, it is impossible to definitely determine the exact amount of interest. For the purpose of setting before the members of the Joint Meeting and their constituents approximately the amount to be received by them from Roselle Park, the following table has been compiled, which includes interest up to the 15th of October, 1911. The exact amount due each of the municipalities can be determined by adding the interest charges

on the principal amount from October 15, 1911, to the date upon which payment is made by Roselle Park:

	Percentage of Ownership.	Proportion of $15,000.	Interest to Oct. 15, '11.	Total.
*Newark	20.30%	$3,045.00	$548.10	$3,593.10
Summit	20.13%	3,019.50	543.51	3,563.01
South Orange	16.29%	2,443.50	439.83	2,883.33
Millburn	10.42%	1,563.00	281.34	1,844.34
Irvington	16.06%	2,409.00	433.62	2,842.62
West Orange	16.80%	2,520.00	453.60	2,973.60

(*Including Vailsburg.)

"Drake Suit.—The trial of this suit has been postponed from time to time. It was set down for the 23d of October, but was again put off to accommodate the plaintiff. Your Engineer continues to accumulate evidence as to the sanitary condition of the whole watershed and its unsuitability and dangerous nature for the ponding of water for ice. Previous reports have set forth the conditions which have been found in this watershed.

"The flooding of the sewers in the district tributary to the outlet passing through Drake's pond has been more marked during the recent rain storms in late September. As these storms have not affected the other branches of the sewer to the same degree as this particular section, it is a safe conclusion that much of the water came from Newark's temporary connection with our sanitary sewers. These sewers will be greatly relieved when Newark builds its storm water system throughout this territory. Talk of the construction of this sewer has been rife for a long time. Newark's engineer has informed me that actual work was to have commenced even before this time. The Joint Meeting cannot afford indefinitely to countenance Newark's use of the joint sewer for drainage purposes even when such is of great sanitary value to the district thus benefited. Newark should be respectfully urged to expedite the construction of a storm water system for this territory, and thus save the unpleasant alternative of being required to sever each visible rain or surface water connection from the joint sewer.

"Water-tight Sewers.—The success attending the efforts of your Engineer in constructing sewers in the Township of South Orange, where we have succeeded in keeping the leakage down to 400 gallons per mile per day, warrants the recommendation that the constituent members of the Joint Meeting be urged to insist on similar tight work in the construction of their lateral extensions. This result has been obtained at an added cost of fifteen per cent., but it means a practical increase of one hundred per cent. in the effective size of the sewers or in the length of sewerage facilities available. As ordinarily laid under reasonable

precautions, sewers have a leakage of not less than 25,000 gallons per mile per day, which is about equal to the average sewage flow in a sparsely settled community. The extra expense, therefore, of securing tight work is fully justified. Several of the municipalities have put similar rigid restrictions into force with markedly successful results.

"From the Chief Inspector's report, you will see that the sewer is in excellent condition. Some care, however, is required at the upper stretches of the sewer where the grades are slight. The total cost of cleaning and repairs on the Joint Trunk Sewer during the last five years compares most favorably with other systems of sewers constructed in different parts of the country.

"Examinations have been made of the outlet in Staten Island Sound, and with very rare exceptions, the condition of the Sound near the outlet indicates few traces of a nuisance on account of the existence of the outlet sewer. Your Engineer is keeping in touch with the agitation now going on in the Metropolitan District relative to sewerage. It will be many years before action will be taken requiring the removal of sewage from the waters of New York harbor and adjacent inlets, and consequently, except by the passage of some general law by the State of New Jersey compelling the treating of the discharge from sewerage systems already constructed or projected, before emptying into the waters of the State, it will be many years before the Joint Meeting is compelled to take any action looking to the treatment of the effluent from the Joint Trunk Sewer.

"Respectfully submitted,

"ALEXANDER POTTER."

The Treasurer read the following report, which was accepted and ordered printed in the minutes:

"To the Various Municipalities Comprising the Joint Sewer Meeting:

"Gentlemen:—

"The Treasurer respectfully reports that on the Fifteenth day of June, Nineteen Hundred and Eleven, he had on deposit in the Orange National Bank the sum of Nine Hundred and Seventy-seven Dollars and Two Cents ($977.02), since which time he has received from various sources, as shown in the itemized statement hereunto annexed, the sum of Three Thousand and Seventy-six Dollars and Thirty-one Cents ($,076.31), making the total amount of cash on hand the sum of Four Thousand and Fifty-three Dollars and Thirty-three Cents ($4,053.33). Since that date he has paid out in various vouchers, as shown in said itemized statement, the sum of One Thousand Seven Hundred and Seventy-seven Dollars and Ninety-two Cents ($1,777.92), so that he should have on deposit in the Orange

National Bank the sum of Two Thousand Two Hundred and Seventy-five Dollars and Forty-one Cents ($2,275.41). Warrant No. 1792, drawn to the order of Francis Speir for the sum of Fifteen Dollars ($15.) has not yet been presented for payment, and is now outstanding, so that the Treasurer actually has on deposit in the said Orange National Bank the sum of Two Thousand Two Hundred and Ninety Dollars and Forty-one Cents ($2,290.41).

"All of which is respectfully submitted this Twenty-sixth day of October, Nineteen Hundred and Eleven.

"SIMEON H. ROLLINSON,
"Treasurer."

The Inspector's report was read, accepted and ordered placed on file.

Mr. D. H. Greene, as Chairman of the Auditing Committee, presented the following report:

"October 16, 1911.

"Mr. Arthur Tepper,
"Secretary, Joint Meeting,
"Millburn, N. J.:

"Dear Mr. Tepper:—

"In compliance with the resolution passed at the June meeting of Joint Meeting, I engaged Mr. C. C. Taylor of 672 Mt. Prospect Avenue, Newark, to examine the accounts of the Secretary and Treasurer of the Joint Meeting for the sum of $75.00, the amount appropriated at the June meeting. As you are aware Mr. Taylor did the work during the summer, and on September 16th supplied me with three copies of his findings. Of these I mailed one copy to Mr. Kenney, one to Mr. Allen and one to Mr. Speir with letters of explanation and requests for instruction, so that the Committee might be able to report at the first meeting held by the Joint Meeting. I received replies from all except Mr. Allen, who was away from home and did not return until October 6th, when he answered the letter.

"I immediately wrote to Mr. Taylor asking him to prepare such forms of vouchers as he considered proper for the Secretary and his recommendations as to what books should be arranged for.

"His reply is attached with forms in blank.

"As it will be impossible for me to be present at your meeting on the 19th, I would ask that you read this letter first as my report, then the report of the accountant dated September 16th, and then his further report of October 9th.

"After this has been done I would like the matter of closing the accounts of the date of July, 1904, brought up for consideration, as it seems the work was paid for but never performed.

"After this matter has been decided I think the question of closing the books to some date in 1911 should be discussed and the new books and vouchers started so that there will be a simple business system inaugurated.

"If the question is left open for the Auditing Committee to finish up the work, I will be at liberty and willing to meet with the Committee any evening the following week, except Monday, which you may arrange so that the Treasurer and yourself may be present.

"I sincerely regret being unable to be with you Thursday night, but it is the annual meeting and official visit of my lodge, of which I am presiding officer, and cannot avoid. So please let me hear from you in reference to the matters contained herein.

"Sincerely and respectfully yours,

"David H. Greene,
"Irvington, N. J."

"576 Fifth Ave., New York,
"September 16, 1911.

"Mr. D. H. Greene,
"Chairman Auditing Committee,
"Joint Meeting:

"Dear Sir:—

"I hereby certify that under your direction I have made a careful and thorough audit of the Secretary's and Treasurer's books for the maintenance period of the sewer, that is, from July 1, 1904, to July 1, 1911, and in the schedules annexed hereto give to your Committee the results of my examination:

Schedule No. 1.—Trial balance as of June 30, 1911.
Schedule No. 2.—Footings of Treasurer's cash book from October 1, 1906, to June 30, 1911, Folio 111 to 141.
Schedule No. 3.—Reconciliation of discrepancy between Secretary's and Treasurer's cash balance as of June 30, 1911.
Schedule No. 4.—Showing excess of cash in bank as per pass book over Treasurer's balance per cash book at end of Mr. Wm. Rollinson's term of office, December 31, 1906.
Schedule No. 5.—Reconciliation of bank balance as per pass book and Treasurer's balance June 30, 1911.

"Referring to the above schedules, in No. 1 you will notice that the construction accounts still remain open, not having been closed at end of construction period as should have been done, notwithstanding the fact that at the June, 1904, meeting a resolution was voted authorizing the employment of a book-keeper for two weeks to close the books, and in the following month, July, 1904, his bill of $104.71 for services was ordered paid. The books, however, were not closed, the reason for which does not appear.

"From an accounting and business standpoint this shows loose and neglectful book-keeping methods, which your Committee should correct now that it is called to your attention. I therefore recommend that steps should be taken to have the books properly closed, the reason for which, if argument were needed, being that the books of accounts should most assuredly show at a glance the cost of construction of sewer.

"Referring to Schedule No. 2, the Treasurer's Cash Book pages had not been totaled so it was necessary for me to supply the footings in order to get a correct balance. If Treasurer would foot each page and carry totals forward it would facilitate the work of the Auditing Committee.

"Referring to Schedule No. 3, at the beginning of my audit I learned that an unexplainable discrepancy of about $1,100.00 existed between the Treasurer's and Secretary's cash account, which is fully reconciled by this schedule. The item of $300.00 against Irvington, assessment of June 28, 1906, still unpaid, should be collected, as arrearage was acknowledged by Town Clerk in checking up account with him.

"I have made a careful audit of the Secretary's petty cash account and found same correct and methodically kept. Amount disbursed in this account during the seven years was $3,865.94, an average of about $550.00 per year. The greater part of this is for laborers keeping sewer in repair under the direction of Inspector, who pays the men and gives his receipt to Secretary for amount expended in this way. Some of these receipts cover a period of two or three months to nearly a year. From a strictly business and auditing point of view a better form of voucher would be one signed by the laborers. I would therefore recommend for your consideration that the Secretary be authorized to procure a printed pay roll form with space for date, name, amount, signature of laborer, also of inspector, to be used as a voucher. The adoption of such a voucher would preclude the possibility of any future criticism as to method regarding this matter.

"After the errors and inaccuracies noted in this report shall have been corrected and the books and accounts written up and properly closed under the date of June 30, 1911, so as to give a good, clean start on July 1, I think there will be no difficulty in keeping the accounts correctly if the Treasurer furnishes a detailed report of all receipts and disbursements at each meeting from which the Secretary by comparison with his books could correct any differences which may exist.

"In closing this report I desire to thank the Secretary and Treasurer for their readiness and willingness to help in any way possible by placing books and papers for my use.

"Respectfully submitted,

"C. C. Taylor,
"Accountant."

"578 Fifth Ave., New York City,
"October 9, 1911.

"Mr. D. H. Greene,
"Chairman Auditing Committee,
"Joint Meeting:

"Dear Sir:—

"I herewith enclose two blank forms which I think will be found suitable to the purpose for which they are intended; one a record of assessment account for the year, which, on being filled out by the Secretary, would enable you to know, at any time, the exact condition of the account and payments thereon.

"The other form, a payroll voucher for the petty cash, which can also be used as a voucher for materials and supplies bought by the Inspector, by attaching the receipted bills, thus making a uniform voucher for the petty cash account.

"There are two or three supplementary suggestions that I would like to make in regard to keeping the accounts, which, if carried out, would simplify the method and facilitate the work of auditing.

"The Secretary should have a General Cash Book, Journal, and a Petty Cash Book, but in order not to multiply the number of books, his present cash book would answer by using the front part for the general cash, as at present, a few pages in the middle of the book for the journal entries, and the back of the book for the petty cash account. The last should show amounts received from Treasurer for this fund, and disbursements giving number of voucher, then quarterly the disbursements to be credited to petty cash account in ledger and charged to maintenance.

"Heretofore the charge to maintenance has been made when check was received from the Treasurer.

"In regard to the method of handling the assessments and payments it has been the custom to credit the amount of assessment, when levied, to maintenance account. A better plan would be to open an assessment account in the ledger, also an account with each municipality, all assessments to be credited to 'Assessment Account' when levied, and each municipality charged with its apportionment, and credited when payment is made. Under this method the ledger accounts would always show any arrears of payments of assessments.

"The assessment account could be closed at end of year by transferring the year's assessments to maintenance account.

"Another recommendation I wish to make is one which, if acted upon favorably, would be of great help to the Secretary in keeping his accounts. It, of course, devolves upon the Secretary to keep the accounts, and, to do this accurately, it is essential that he should have all the data at first hand to enable him to make his entries properly.

"As he issues bills for assessments, and any other amounts that may be due to the Joint Meeting, all payments, from whatever source, should be made direct to the Secretary, and, after proper record in his books, to be forwarded to the Treasurer to be deposited in the bank, and paid out on warrant signed by President, Secretary, and Treasurer.

"The bank should also be requested to send to the Secretary a credit memorandum for interest allowed on deposits.

"Respectfully submitted,

"C. C. Taylor,
"Accountant."

Mr. Greene recommended that the suggestion of Mr. Taylor, that the Construction Account be closed, be acted on by the Joint Meeting. So ordered.

It was then moved that Accountant be engaged to close the books to April 1, 1911. Seconded and so ordered.

Mr. Greene recommended that suggestion of Accountant regarding vouchers, form of receipt and method of keeping the books be adopted and that Secretary have the necessary blanks printed. Seconded and so ordered.

Mr. Greene moved that the recommendation of Accountant that all moneys be paid to the Secretary be adopted, and that the various municipalities be requested to mail all checks to the Secretary, who, after making proper entries, will forward them at once to the Treasurer. Seconded and so ordered.

A motion was made and seconded that the report of the Auditing Committee as submitted be accepted. So ordered.

A motion was made that the present Auditing Committee be empowered to proceed to the completion of work as suggested by Mr. Taylor, expending such money as they may deem necessary to accomplish this purpose not exceeding $150.00. A vote being taken by roll call resulted, 6 ayes, no noes.

Mr. Greene moved that Secretary send a bill to the Town of Irvington for the June 28, 1906, assessment for $300.00, remaining unpaid. So ordered.

Mr. Adrian Riker, being present, spoke at some length about the Drake suit, now pending, and advised the Joint Meeting to take such steps as will effectively guard against any overflow in future at this point.

Mr. Alexander Potter pointed out that, when the proposed storm sewer is constructed to take care of Irvington's storm

water, the Joint Sewer will be so relieved as to prevent overflow.

A motion was made that the Engineer report at the next meeting, what, in his judgment, can be done to relieve the situation. So ordered.

The agreement with Roselle Park (heretofore authorized) was executed by the Chairman and attested by the Secretary and handed to Mr. Riker to dispose of.

The following letter from Inspector Sandford was read:

"South Orange, N. J.,
"October 26, 1911.

"To the Joint Meeting:

"Gentlemen:—

"On the evening of September 2nd, as I was about to alight from an open trolley-car at Valley Street and Roland Avenue, the conductor gave bell to start. I was in the act of stepping to the run-board as the car started with a jerk which threw me back with full force, striking the end of my spine on the iron frame on the end of the seat-back. It was very painful at the time, so much so that I could hardly walk home.

"Thinking it was nothing more than a bruise and would wear away, I kept on the work until the 8th, when I was obliged to quit work and go to the doctor for treatment. The injury proved to be more serious than I thought; I am still being treated by the doctor, and am improving daily and expect to be able to resume work by Monday next.

"During this time I have reported for duty twice to Chief Engineer Alexander Potter. On both occasions I had to give up, as I could not ride or walk on account of the jar. Since September 8th, it has been necessary to put on help to assist Corey W. Sandford on the work. I have paid personally from my own funds for a portion of the time for the extra help—that part of the time when no other work was done other than looking after the gauges.

"I submit the above report, and if, in the judgment of the Board, I should pay more, the amount agreed upon may be dededucted from my salary. (I was not on duty when the accident happened.)

"Yours respectfully,

"F. Ross Sandford,
"Inspector."

Mr. Merrill made a motion that whatever money Mr. Sandford had paid himself on account of services rendered the Joint

Meeting be returned to him, and further that any other necessary help be paid for by the Joint Meeting. So ordered.

The following bills were read, approved and ordered paid. A vote by roll call resulted, 6 ayes, no noes:

Alexander Potter, July salary	$ 83.00
F. R. Sandford, July salary	131.00
C. W. Sandford, July salary	75.00
Arthur Tepper, petty cash	114.73
Alexander Potter, August salary	83.33
F. R. Sandford, August salary	131.00
C. W. Sandford, August salary	75.00
Alexander Potter, September salary	83.33
F. R. Sandford, September salary	131.00
C. W. Sandford, September salary	75.00
New York Telephone Co.	9.60
American Surety Co.	20.00
Queen & Co.	4.25
Summit Herald	6.00
H. S. Fish	2.75
S. H. Rollinson	50.00
Arthur Tepper	87.00
Arthur Tepper, petty cash	103.22
Alexander Potter, October salary	83.33
F. R. Sandford, October salary	131.00
C. W. Sandford, October salary	75.00
Adrian Riker	350.00

On motion the meeting adjourned.

ARTHUR TEPPER,
Secretary.

Joint Meeting of February 1, 1912.

The regular meeting of the Joint Meeting was held in South Orange Village Hall, on Thursday evening, February 1st, 1912.

Present: Francis Speir, Chairman; A. R. Denman, of Newark; D. H. Greene, of Irvington; J. J. Kenney, of West Orange; E. S. Allen, of South Orange, and E. L. Smithers, of Millburn.

The minutes of the last meeting were approved as printed.

The Engineer read the following report, which was received and ordered incorporated in the minutes:

"February 1, 1912.

"To the Joint Meeting:

"Gentlemen:

"Your Engineer begs to submit the following report on matters of interest to the Joint Meeting:

"Roselle Park Contract.—Roselle Park has accepted the terms of the new contract between the Joint Meeting and Roselle Park, and Mayor Horning advises me that they have $10,000 available at the present time which can be turned over to the Joint Meeting under the contract. The Council meets on the first and third Friday of each month, and the money can be turned over to the Joint Meeting at any meeting.

"Drake Case.—Your Engineer and Inspectors have been holding themselves in readiness for the trial of the Drake case for alleged pollution of the ice pond in Irvington by reason of the overflow from the Joint Trunk Sewer. Mr. Riker, the attorney for the Joint Meeting, has informed me that this case has finally been set down for a hearing on Monday, February 5th, although it was originally set down for a hearing on the 29th of January, but was not reached at that time. It is both unwise and unnecessary to make any comment upon the merits of this case at this time.

"In compliance with a resolution of the Joint Meeting, I have investigated the matter of furnishing relief from the congestion in the sewer along the valley of the Elizabeth River from Lyons Avenue to Drake's pond, and present herewith plans for a construction which will afford such relief, together with an estimate of the cost.

"I have made some computations of the flows in the various branches of the junction of the Lyons Avenue sewer with the Joint Trunk Sewer. The Joint Trunk Sewer to the northeast of Lyons Avenue has a carrying capacity of 7,500,000 gallons daily. The 18-inch sewer on Lyons Avenue entering the Joint Sewer from the east can bring down to the Joint Sewer, without overflowing, 2,700,000 gallons. From Lyons Avenue to Lindsley Street, the

Joint Trunk Sewer is 24 inches in size, and is laid with a fall of only two feet in a thousand. This fall gives the sewer a carrying capacity of 6,000,000 gallons daily. It is possible, and altogether very likely, that the total flow at the junction of the Joint Trunk Sewer and the Lyons Avenue sewer may amount to 10,200,000 gallons for short periods during excessive rain storms.

"In the design of a sanitary sewerage system, it is not customary nor advisable to make the carrying capacity of the trunk sewer equal to the sum total of its tributaries or branches. Under normal conditions, very few, if any, of the lateral sewers are ever taxed to their full capacity. However, under certain conditions during very heavy rain storms, all of the laterals may flow full and overtax the trunk sewer and cause it to overflow. This is exactly what happens in the 24-inch Joint Sewer from Lyons Avenue to Lindsley Street.

"Provisions have been made by your Engineer to take care of the excessive storm water flow at such times by placing a storm water overflow in the Lyons Avenue sewer at the point where it crosses the Elizabeth River. A permit has been obtained from the State Board of Health for the maintenance of this overflow.

"The storm water sewer to be constructed this summer jointly by Newark and East Orange will relieve this congestion to some extent, but until this sewer is completed and put in operation it will be necessary to maintain this storm water overflow at Lyons Avenue. Accordingly I have made application to the State Board of Health, in the following letter, for a continuance of the permit to maintain this overflow:

" 'February 1, 1912.

" 'To the State Board of Health,

" 'Trenton, New Jersey:

" 'Gentlemen:—

" 'On behalf of the Joint Meeting I beg to make application for a continuance of the permit to maintain a storm water overflow from the Lyons Avenue branch of the Joint Trunk Sewer at the point where it crosses the Elizabeth River in Irvington, N. J.

" 'This overflow has been in operation not exceeding four or five times, and not over two hours at a time, during excessive rains. The condition of the river as noted below at such times shows that any trace of sewage is lost within fifteen or twenty feet of the overflow. It is absolutely necessary to maintain this overflow until such time as the storm water relief contemplated by Newark and East Orange is completed. Mr. Rankin, the Chief Engineer of Sewers and Drainage of Newark, has informed me that they are now acquiring the right of way for this sewer and expect the construction of it to be under way by the first of June. It will take approximately a year to complete the construction of the sewer.

"'I trust your Department will see its way clear to extend the permit for the maintenance of this overflow until the construction of this contemplated storm water relief is completed.

"'Yours very truly,

"'ALEXANDER POTTER,

"'Chief Engineer, Joint Trunk Sewer.'

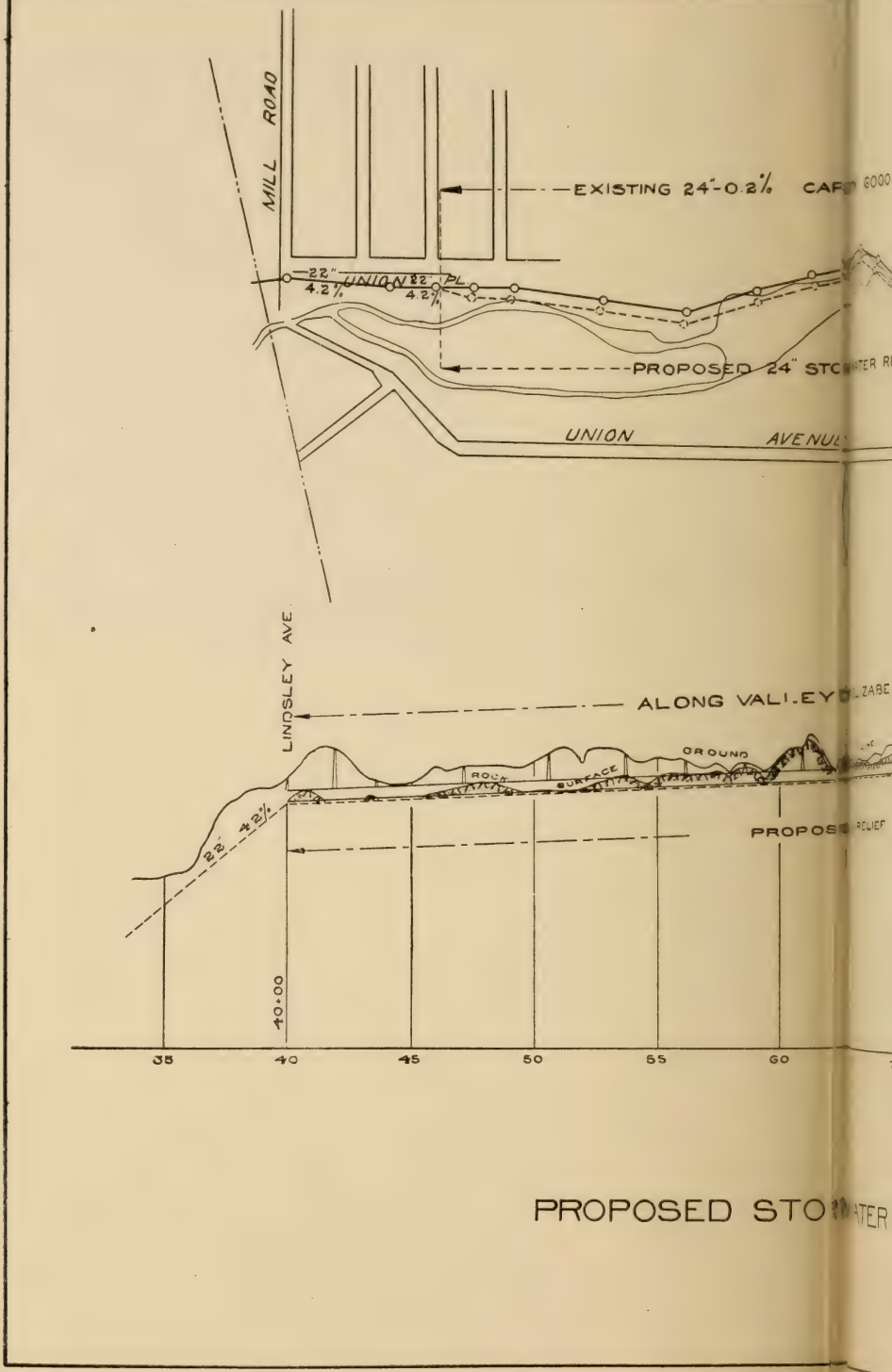
"Permanent relief from the congestion of the Joint Sewer along the valley of the Elizabeth River can only be obtained by increasing the carrying capacity of the Joint Trunk Sewer from Lyons Avenue to Lindsley Street, a distance of 4,760 feet. This can be done most cheaply by laying a vitrified pipe sewer immediately to the east and parallel to the existing 24-inch sewer. If this new sewer is made 24 inches in size, it will have a carrying capacity of 6,000,000 gallons daily, and its construction will entirely relieve the congestion and do away with the storm water relief now maintained at the Lyons Avenue crossing.

"Accompanying this report is a plan and profile of this proposed relief. On the profile is reproduced, from the original construction notes, the depth at which rock is encountered.

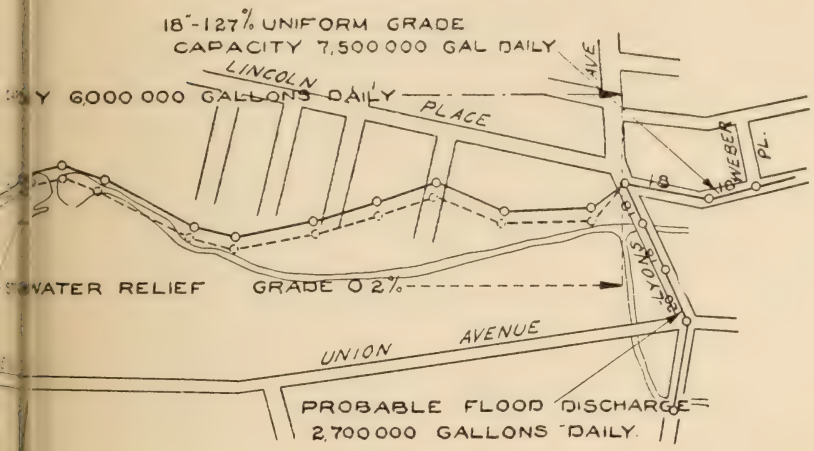
"The cost of constructing such a permanent relief will not exceed $16,446. A detailed estimate of the actual quantities and the cost of construction is attached to this report.

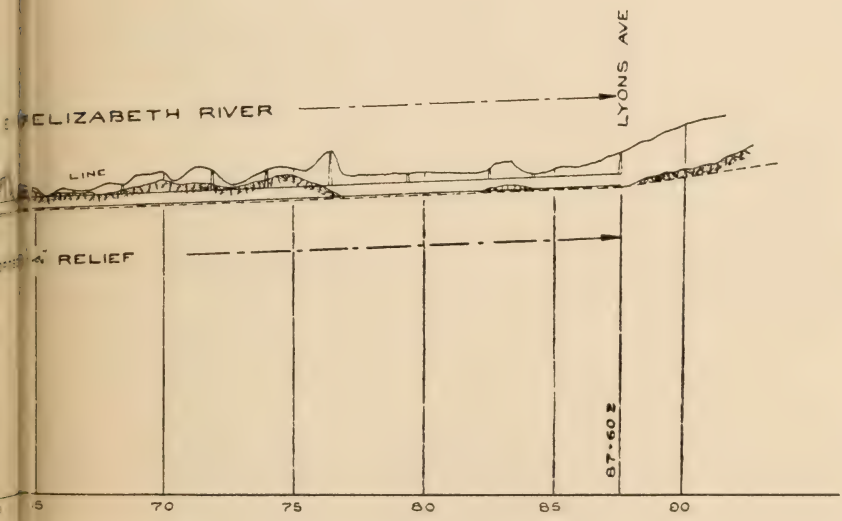
"Respectfully submitted,

"ALEXANDER POTTER."



PROPOSED STO





WATER RELIEF

Estimate of quantities and cost of constructing storm water relief for Joint Trunk Sewer from Lyons Avenue to Mill Street:

3,280 lineal feet of 24-inch v. p. sewer, 0-6 feet deep, at	$ 2.00	$ 6,560.00
1,355 lineal feet of 24-inch v. p. sewer, 6-10 feet deep, at	2.20	2,980.00
125 lineal feet of 24-inch v. p. sewer, 10-14 feet deep, at	2.65	332.00
1,200 cubic yards rock excavation, at	2.75	3,300.00
222 cubic yards gravel or coarse sand for bedding pipe on rock, at	1.25	277.00
18 manholes, at	45.00	810.00
5 cubic yards of concrete, at	8.50	42.00
		$14,301.00
Plus 15% for engineering and contingencies		2,145.00
Total		$16,446.00

A motion was made that the Secretary be directed to send notice to Roselle Park that money is due on the contract and that same is bearing interest at the rate of 6% per annum from October 15th, 1908, to date of payment.

At present this interest amounts to $2,965.00, which, together with the principal, amounts to $17,965.00, for which immediate settlement is requested. So ordered.

Mr. Greene read a report from Mr. C. C. Taylor, the accountant engaged to close the construction accounts, which was accepted, and schedule No. 1 of the report was ordered printed in these minutes:

Cost of Construction.

Main Trunk Sewer, Sections 1 and 2 X. A.	$344,126.54
West Branch, Main Stem, Section 3 A. B.	193,380.72
West Branch, W. O. & S. O. Line, Section 4 B. K. L.	73,094.02
East Branch, Section 5 A. Q. T.	131,990.24
West Branch, Summit-Millburn Div., Section 6 B. I.	75,096.75
	$819,688.27

Assessments.

Summit	$177,958.99
West Orange	150,050.97
South Orange	142,290.75
Irvington	109,808.76
Millburn	92,119.06
Vailsburg	70,393.81
Newark	68,378.10
Roselle Park	7,500.00
Interest	1,187.83
	$819,688.27

A motion was made that in accordance with Mr. Taylor's recommendation the "Suspense Account" be written off to Maintenance Account and thus charged off to Profit and Loss. So ordered.

The Treasurer's report was read, accepted and ordered printed in the minutes:

"To the Various Municipalities Comprising the Joint Sewer Meeting:

"Gentlemen:

"The Treasurer respectfully reports that on the Twenty-sixth day of October, Nineteen Hundred and Eleven, the date of his last report, he had on deposit in the Orange National Bank the sum of Two Thousand Two Hundred and Ninety Dollars and Forty-one Cents ($2,290.41), since which time he has been credited with interest amounting to Nine Dollars and Eighteen Cents ($9.18), and on January Fifth, Nineteen Hundred and Twelve, credited with Eighty-six Cents (.86), an error made on a deposit slip, making a total amount of cash on hand amounting to Two Thousand Three Hundred Dollars and Forty-five Cents ($2,300.45), as shown in the itemized statement hereunto annexed; since said date he has paid out in various vouchers, as shown in said itemized statement, the sum of One Thousand Seven Hundred and Forty-nine Dollars and Thirty-seven Cents ($1,749.37), which includes Warrant No. 1792, which was outstanding at the date of the last report, so that the Treasurer now has on deposit in the Orange National Bank the sum of Five Hundred and Fifty-one Dollars and Eight Cents ($551.08).

"The three warrants for the January salaries aggregating Two Hundred and Eighty-nine Dollars and Thirty-three Cents ($289.33) are still outstanding, so that the real amount of cash on hand amounts to Two Hundred and Sixty-one Dollars and Seventy-five Cents ($261.75).

"All of which is respectfully submitted this First day of February, Nineteen Hundred and Twelve.

"SIMEON H. ROLLINSON,
"Treasurer."

A motion was made that the Treasurer report at each meeting the assessments paid and outstanding from the various municipalities. So ordered.

The report of the Inspector was accepted and ordered placed on file.

A motion as follows was made, seconded and, on being put to vote, resulted 4 ayes no noes:

"Resolved, That the several municipalities do raise and pay to the Treasurer of the Joint Meeting the sum of $3,050.00, which shall be assessed upon the joint municipalities in the proportion fixed by the contract between the several municipalities as provided for the care and maintenance of the Joint Sewer, i. e., each municipality paying an equal amount or one-seventh of such assessment (excepting the City of Newark, which shall pay two-sevenths, or one-seventh for Newark and one-seventh for Vailsburg), and, further, that the Secretary be directed to notify the various municipalities of such assessment and the proportion to be paid by each; and be it further

"Resolved, That the said moneys be paid to the Treasurer of the Joint Meeting within twenty days of the 1st day of February, 1912."

This is the assessment for the 4th quarter of 1911 and 1st quarter of 1912.

A motion was made that the assessments for maintenance be the same as for the past year, viz., $6,100.00, and that the Secretary notify the various municipalities to this effect and state the portion due from each. So ordered.

The following bills were read, approved and ordered paid, a vote by roll call resulting, 4 ayes, no noes:

Alexander Potter, November salary	$ 83.33
F. R. Sanderson, November salary	131.00
C. W. Sandford, November salary	75.00
Secretary, petty cash	96.00
Secretary, petty cash	50.55
Alexander Potter, December salary	83.34
F. R. Sandford, December salary	131.00
C. W. Sandford, December salary	75.00
Alexander Potter, January salary	83.33
F. R. Sandford, January salary	131.00

C. W. Sandford, January salary	75.00
Arthur Tepper, salary	87.00
S. H. Rollinson, salary	50.00
H. S. Fish	10.55
Summit Herald, printing minutes	18.00
N. Y. Telephone Co.	13.10
C. C. Taylor, expert accountant	225.00
F. R. Sandford, expense account	19.80
Secretary, petty cash	16.00

On motion the meeting adjourned.

ARTHUR TEPPER,
Secretary.

Joint Meeting of April 25, 1912.

Meeting of the Joint Meeting held in South Orange Village Hall, on Thursday evening, April 25, 1912.

Present: Francis Speir, Chairman; A. R. Denman, of Newark, Vice-Chairman; D. H. Greene, of Irvington; E. S. Allen, of South Orange; J. J. Kenney, of West Orange; E. L. Smithers, and T. E. Debevoise represented Summit for the evening.

As the Mayor and Council of Roselle Park were present, with their Counsel and Engineer, for the purpose of discussing the terms of settlement to be made in the matter of purchase of additional capacity in the Joint Sewer by Roselle Park, the regular order of business was suspended in order that they might be heard.

Mr. Johnston spoke at some length, requesting that the item of interest be omitted in making settlement, or that it be reduced. The Mayor then spoke along similar lines.

Mr. Speir answered, speaking for the Joint Body, and stated that even should the representatives present feel inclined to accede to this request, they had no power to alter in any way the terms of the agreement. That would have to be done by a separate resolution by each of the municipal bodies interested and would of necessity take some time.

The sentiments expressed by the representatives of the various municipalities present tended to show that no reduction would be considered by their governing bodies, and further there seemed to be some doubt as to another contract as favorable to Roselle Park being given should the matter come up for action again.

Mr. Adrian Riker then spoke on the legal aspect of the agreement bearing out Mr. Speir's summary of the situation. He also called attention to the fact that Roselle Park has been using the sewer largely in excess of its authorized capacity for the last three of four years and that it was not at all unreasonable that the Joint Meeting insist on the full terms of the contract.

Mr. O'Connor, Counsel for Roselle Park, then spoke, still asking that the interest charge be remitted, but brought out no facts or arguments which tended to change the opinion of the representatives of the various municipalities as to the fairness of the terms of the contract.

The Roselle Park delegation then retired.

In the absence of Chief Engineer, Alexander Potter, Mr. Beyer, his assistant, submitted the following report, which was received and ordered printed in the minutes:

"April 25, 1912.

"To the Joint Meeting:

"Gentlemen:—

"In Mr. Potter's absence, and in accordance with his written instructions, I beg to submit the following report of matters of interest to the Joint Meeting:

"*Drake Case.*—The case of Mahlon H. Drake, Sr., vs. the municipalities of Newark, Irvington and South Orange Village, came up for trial on April 17th, during Mr. Potter's absence from the city. This case required considerable preparation on the part of the Chief Engineer and his assistants. The time devoted to this case, including four days' attendance of the writer at court, as Chief Assistant Engineer to Mr. Potter, covers a period of about two weeks. The trial was concluded on Tuesday, the 23rd, and resulted in a verdict of $3,425.00 damages to the plaintiff. As Mr. Adrian Riker, the attorney for the defendants, will no doubt make a detailed report on this case, I deem is unnecessary to make any further comment.

"*Re Lyons Avenue Overflow.*—Mr. Rankin, the Chief Engineer of Sewers and Drainage, of the City of Newark, has informed me that the contracts for the construction of the storm water sewer to be constructed jointly by Newark and East Orange will be let in approximately two weeks' time. The construction of this storm sewer will materially relieve the congestion at the Lyons Avenue bridge during severe rainstorms.

"On February 23rd, 1912, the following letter was received from the Board of Health of the State of New Jersey:

"'Trenton, February 23, 1912.

"'Alexander Potter, C. E.,
"'114 Liberty Street,
"'New York City:

"'Dear Sir:—At a meeting of the Board of Health of the State of New Jersey, held February 20, 1912, your letter of February 1, 1912, making application for a continuance of the permit to maintain a storm water overflow from the Lyons Avenue branch to the Joint Trunk Sewer at the point where it crosses the Elizabeth River in Irvington, N. J., was presented.

"After careful consideration of the matter, motion was made and carried that said application be refused and that you be notified that this overflow must be taken out immediately.

"'Very respectfully,

"'BRUCE S. KEATOR,
"'Secretary.'

"Following is a copy of Mr. Potter's reply:

"'San Antonio, Texas, Feb. 28th, 1912.

"'Mr. Bruce S. Keator, Sec'y Board of Health,
"'Trenton, N. J.:

"'Dear Sir:—I have your letter of February 23rd, notifying me of the action of the State Board of Health, and I beg to state that I have this day issued instructions to have the overflow under the Lyons Avenue bridge sealed as per your instructions.

"'I beg to call your attention to the fact, however, that the City of Newark is undertaking the construction of storm water sewers which will remedy this situation, but until these are completed, the shutting off of this connection may mean the backing up of sewage into the cellars along the line of the sewer, which in my judgment will be infinitely more damaging than the occasional overflow of the diluted sewage into the stream in time of storm, with possible consequent sickness and death, and that if sickness occurs the responsibility must of course be borne by the State Board of Health in view of its action. I trust, however, that the carrying out of the edict of the Board will not so result.

"'I will urge the City of Newark and other towns to proceed as rapidly as possible with their storm sewers so that the danger mentioned will be minimized to the greatest possible extent.

"'Yours respectfully,

"'ALEXANDER POTTER.'

"Before instructions were forwarded to Mr. Sandford, the Chief Inspector, to close the Lyons Avenue overflow in accordance with the orders of the State Board of Health, the State Board called this office on the telephone and stated that they wished to further investigate the conditions, and that Mr. C. Wrigley, one of the Board's engineers, would make an examination on the ground during the wet weather period.

"Mr. Wrigley made two examinations. On each occasion he was accompanied by Mr. Sandford. One of these examinations was made on March 12th, the other on March 14th. Since these examinations were made by the State Board's engineer, no definite instructions whatever have been received from them in reference to the maintenance of the storm water overflow.

"This spring has been an unusually wet one. During the early part of March, especially on the 12th and 15th, unusually heavy rains fell on partially frozen ground, inundating the lowlands in the municipalities tributary to the Joint Trunk Sewer. Trouble was experienced in Sections 4 and 5. Both of these sections were flowing full and overflowing for a period of several days, and did not regain their normal condition for two weeks on account of several smaller rainstorms which followed this period of intensely heavy precipitation. During these storms the tops of the manholes on Section 4 were covered with water ranging in depth from 3 inches to 3 feet. A great portion of the land along the line of Section 4 was under water. Just south of manhole No. 35 the water reached a depth of 3 feet over the manhole cover. In Section 5, the Vailsburg district, south of South Orange Avenue, the land was entirely under water. On South Orange Avenue, along Electric Park, the street cars were prevented from running. The greater portion of Section 5, in Irvington and Newark, was gorged and overflowing. Never before in the history of the Joint Trunk Sewer has this condition existed to the same extent.

"Several of the contributing municipalities are exceeding their capacity in the Joint Sewer during heavy rain storms. Since West Orange has made the transfer with Orange a much greater flow has resulted from West Orange, so that now, during heavy storms, West Orange exceeds its capacity, and a very large percentage of this excess comes from the Orange outlet.

"The enormous increase in the volume of flow from several municipalities in flood periods during the last year or year and a half clearly points to laxity in the enforcement of specifications relative to making the joints in the sewer extensions water-tight. Mr. Potter has recommended to the Joint Committee from time to time, the adoption of more rigorous provisions for securing water-tight sewer extensions; it is very evident, however, that these provisions are not carried out by some of the municipalities in building ther sewer connections. Some action should be taken looking to more rigorous relations regarding the exclusion of surface water from local extensions.

"I present herewith a bill of Queen & Co. for $15.00 for 500 charts delivered to Mr. Sandford. The charts were ordered through this office.

"Yours respectfully,

"Albin H. Beyer,

"Chief Assistant Engineer."

Mr. Greene made a motion that the portion of this report referring to laxity in work in building new extensions be transmitted to each municipality by its representative; seconded and so ordered.

A motion was made that the Chief Engineer be directed to investigate the condition in the various municipalities in regard to excessive flow and report to the Joint Meeting at an early date, and that the Joint Meeting then take the subject up with the various municipalities. Seconded and so ordered.

A motion was made that the Chief Engineer be directed to prepare plans and estimates for a relief sewer through Union Avenue to Mill Road at once and advertise for bids, and to notify the Secretary of the time to call a meeting to take action on same. Seconded and so ordered.

A motion was made that when this meeting adjourn it adjourns to meet on date fixed as above to receive bids.

Re Drake Suit.—Mr. Riker advised that judgment be reviewed and that Counsel be instructed to take the necessary steps. A motion to this effect was made, seconded and so ordered.

The report of the Treasurer was read and ordered placed on the minutes:

"To the Various Municipalities Comprising the Joint Sewer Meeting:

"Gentlemen:—The Treasurer respectfully reports that on the first day of February, Nineteen Hundred and Twelve, the date of his last report, he had on deposit in the Orange National Bank the sum of Five Hundred and Fifty-one Dollars and Eight Cents ($551.08), since which time he has deposited moneys received from various sources as shown on the itemized statement hereunto annexed, the sum of Three Thousand and Sixty Dollars ($3,060). He has been credited with interest amounting to Four Dollars and Seventy-nine Cents ($4.79), making the total amount of cash on hand Three Thousand Six Hundred and Fifteen Dollars and Eighty-seven Cents ($3,615.87). Since the date of his last report he has paid out in vouchers, as shown on an itemized statement hereunto annexed, the sum of One Thousand Five Hundred and Five Dollars and Forty-six Cents ($1,505.46), including the warrants for January salaries hereinabove referred to, so that the Treasurer now has on deposit in the Oronge National Bank the sum of Two Thousand One Hundred and Ten Dollars and Forty-one Cents ($2,110.41), with no warrants outstanding.

"All of which is respectfully submitted this Twenty-fifth day of April, Nineteen Hundred and Twelve.

"SIMEON H. ROLLINSON,
"Treasurer."

1912—Balance last report	$ 551.08	
February 6—Millburn	435.71	
February 8—Summit	435.71	
February 9—Irvington	435.72	
February 9—West Orange	435.71	
February 16—Newark	871.43	
February 19—South Orange	435.72	
March 19—John S. Quick	10.00	
March 30—Interest	4.79	
Total		$3,615.87

Itemized Statement No. 2.—Disbursements.

January 31—Alexander Potter	$ 83.33	
January 31—F. Ross Sandford	131.00	
January 31—Corey W. Sandford	75.00	
February 1—Simeon H. Rollinson	50.00	
February 1—Herbert Fish —	10.55	
February 1—Summit Herald	18.00	
February 1—New York Telephone Co.	13.10	
February 1—C. C. Taylor	225.00	
February 1—F. Ross Sandford	19.80	
February 1—Arthur Tepper	16.00	
February 29—Alexander Potter	83.33	
February 29—F. Ross Sandford	131.00	
February 29—Corey W. Sandford	75.00	
March 16—Arthur Tepper	100.00	
March 30—Alexander Potter	83.33	
March 30—F. Ross Sandford	131.00	
March 30—Corey W. Sandford	75.00	
March 30—Arthur Tepper	55.97	
April 8—Arthur Tepper	81.05	
April 18—Arthur Tepper	48.00	
Total		1,505.46
On deposit in Orange National Bank		$2,110.41

The report of the Chief Inspector was read, approved and ordered placed on file.

The Secretary reported that he had been able to secure an office at 13 Beechwood Road, Summit, N. J., in place of the one in Irvington, at a rent of $6.00 per month. The cost of moving

safe, desk, etc., amounted to $25.00. A motion was made that his action be approved. Seconded and so ordered.

The following bills were read, approved and ordered paid. Vote by roll call resulted, 4 ayes, no noes.

Alexander Potter, February salary	$ 83.33
F. R. Sandford, February salary	131.00
C. W. Sandford, February salary	75.00
Alexander Potter, March salary	83.33
F. R. Sandford, March salary	131.00
C. W. Sandford, March salary	75.00
Arthur Tepper, petty cash	100.00
Arthur Tepper, petty cash	55.97
Summit Herald, printing minutes	12.00
N. Y. Telephone Co.	11.00
F. Speir	15.00
A. R. Denman	15.00
D. H. Greene	15.00
E. S. Allen	15.00
E. L. Smithers	15.00
J. J. Kenney	15.00
O. B. Merrill	5.00
Arthur Tepper, salary	87.00
S. H. Rollinson, salary	50.00
Queen & Co., charts	15.00
Summit Express, moving safe and desk	25.00
Alexander Potter, April salary	83.33
F. R. Sandford, April salary	131.00
C. W. Sandford, April salary	75.00
Arthur Tepper, petty cash	81.05
Arthur Tepper, petty cash	48.00
Arthur Tepper, petty cash	20.00

On motion the meeting adjourned, to meet again upon notice to receive bids for relief sewer in Union Avenue.

ARTHUR TEPPER,
Secretary.

Joint Meeting of June 21, 1912.

The Annual Meeting of the Joint Meeting was held in South Orange Village Hall, on Friday evening, June 21, 1912.

Present: Francis Speir, Chairman; A. R. Denman, of Newark, Vice-Chairman; D. H. Greene, of Irvington; E. S. Allen, of South Orange; J. J. Kenney, of West Orange, and E. L. Smithers, of Millburn.

The minutes of last meeting were approved as printed.

The Treasurer read the following report, which was approved and ordered placed in the minutes:

"To the Various Municipalities Comprising the Joint Sewer Meeting:

"Gentlemen:—The Treasurer respectfully reports that on the twenty-fifth day of April, Nineteen Hundred and Twelve, the date of his last report, he had on deposit in the Orange National Bank, the sum of Two Thousand One Hundred and Ten Dollars and Forty-one Cents ($2,110.41), with no warrants outstanding, since which time he has received no money for deposit.

"He has paid out in vouchers since the date of his last report, as shown on an itemized statement hereunto annexed, the sum of One Thousand and Thirty-one Dollars and Eighty-four Cents ($1,031.84), so that the Treasurer now has on deposit in the Orange National Bank the sum of One Thousand and Seventy-eight Dollars and Fifty-seven Cents ($1,078.57), with no warrants outstanding.

"All of which is respectfully submitted this Twenty-first day of June, Nineteen Hundred and Twelve.

"Simeon H. Rollinson,
"Treasurer."

The following letter from South Orange Township was read:

"Mr. Francis Speir, Jr.,
"Chairman, Joint Meeting,
276 Ridgewood Road,
"South Orange, N. J.:

"Dear Sir:—Application is hereby made for permission to connect with the Trunk Line Sewer in Millburn where the Joint Trunk Sewer crosses just west of the Rahway River for a system of laterals already laid and connected at Pierson Road under permission and contract with South Orange Village. This permit if granted will change the capacity used on this system of laterals from the contract this municipality has with South Orange Village to that of the capacity purchased from Millburn Township.

"Yours truly,
"William H. Kemp,
"Chairman."

Upon motion it was referred to the Engineer to investigate and to communicate with the representatives of Millburn, South Orange Village and West Orange, as well as with Mr. Kemp, regarding the matter.

The Engineer read the following report, which was approved and ordered printed in the minutes:

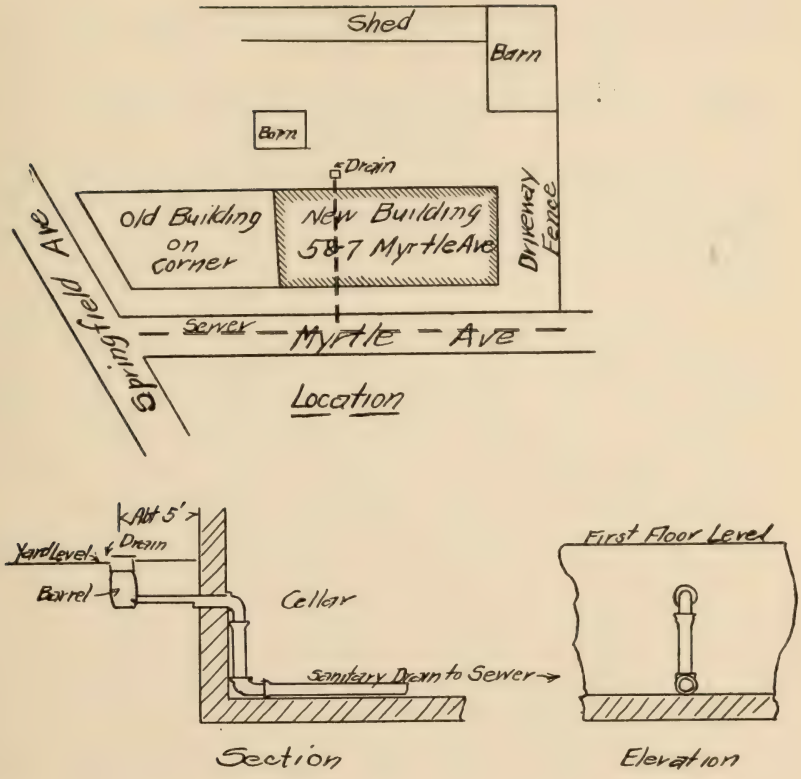
"June 21st, 1912.

"Joint Meeting:

"Gentlemen:—I present herewith data in relation to the investigation made by me in conformity with the recommendation of the Joint Meeting. This investigation was made primarily for the purpose of determining whether or not water infiltration or waste which had no right of entry into the Joint Sewer was finding its way into the said sewer and could be eliminated, and thus render unnecessary the construction of a duplicate sewer through a portion of Irvington.

"My investigation has not been completed, but it has been advanced far enough to indicate that by the adoption of stringent regulations and by putting such regulations rigorously in force, that the need of this enlargement of the trunk sewer can be made less necessary and perhaps avoided altogether.

"Among the most flagrant cases of a direct violation of the rules of the Joint Meeting and of the Town of Irvington was that found on the premises owned by Mr. E. Boerger at Nos. 5 and 7 Myrtle Avenue, within a few hundred feet of the very center of the town. This case is the more flagrant because the owner of these premises is a master plumber as well as a former chairman of the Sewer Committee of the Council of Irvington. The violation referred to consists in the installation of a drain in the yard containing approximately 3,000 square feet, together with the roof water from the adjoining buildings in the yard and on the street, with a total combined drainage area of from 5,000 to 6,000 square feet. While the yard is not paved, the surface is hard and consequently cannot absorb much water. This drain is connected to the sewer through the cellar drain, as shown in the



Sketch Showing Location and Connection of Yard Drain Rear of 5&7 Myrtle Ave

accompanying sketch. While in the preliminary investigation there was every evidence that this drain was connected to the sewer, the only means of positively determining this was to take up the ground over the inlet and follow the drain by digging up the yard to the sewer, or to do so by determining the flow through the sewer. By stationing one observer in the cellar and another at the inlet, and pouring water from a hose in the yard into the drain, it was immediately proved that when the water started to flow into the inlet, water was heard running through the soil pipe in the cellar, and when the hose was turned off the flow of water through the pipe coming through the wall of the cellar from the direction of the drain immediately ceased. There can be no better proof of this direct connection with the sewer. This case is still more aggravated because the plumber in question when asked where the drain led to, informed my representa-

tive and the Joint Sewer Assistant Inspector that it probably ran to the nearest creek, indicating that he knew that it was wrong to connect up with the sewer.

Sketch Showing Location and Connection of Yard Drain Rear of 5 and 7 Myrtle Avenue.

"Another case of a yard connection, draining about 5,000 or 6,000 square feet, is found in Newark, near the Irvington line, where the planing mill of Schanz & Koehler at 731 S. 20th Street, has a direct connection with the sewer, draining both yard and roof.

"From the data submitted herewith it will be seen that in the territory actually examined we find that there are in the Lyons Avenue section of Newark, fifty-seven houses, whose roofs are directly connected with the sewer. In about thirty per cent. of these cases, while there is every evidence that the roofs are connected, it is impossible to determine positively whether the roofs are actually connected with the sewer, although there can be no reasonable doubt but that this is the case.

"From the map presented with this report it will be seen that but a relatively small portion of the area has been covered, but this does not mean that the same number of violations would be maintained throughout the entire district.

"The City of Newark is undertaking the construction of a storm water sewer which will greatly relieve the situation in the Joint Trunk Sewer by lowering the ground water from much of the territory from which drainage water enters the branches of the Joint Trunk Sewer both directly and indirectly. Plans for this sewer are about completed and the contracts will be let within the next few weeks.

"The contract for the storm water sewer through the Vailsburg section, which will afford considerable relief from excessive ground water flows in the Joint Trunk Sewer through Vailsburg, is now advertised for and will be let within the next week or two.

"Both of these branches drain sections where it is proposed to replace the present Joint Trunk Sewer with a larger sewer. It is of extreme importance, therefore, to determine the exact extent of this preventable infiltration and surface water now finding its way into the Joint Trunk Sewer above the towns which will be interested in the cost of this enlargement. The investigation which has been made so far should be continued to cover the entire area draining into the Joint Trunk Sewer. The cost of the investigation to date has been about $200.00.

"I would recommend that the matter of the violation of the Irvington rules in the Boerger case, and also in the case of the houses with their roof leaders connected with the sewer, be re-

ferred to the Irvington Town Council, so that they may put in operation such machinery as will avoid the repetition of this infraction of the rules.

"I desire to call the attention of the Joint Meeting to the necessity of requiring each constituent member of the Joint Trunk Sewer and all of the cities and towns using the Joint Trunk Sewer to adopt the most rigid specifications possible to secure tight sewers and prevent the infiltration of ground water into the sewer, not only in the sewer mains themselves, but also in the house laterals. Many of the municipalities interested have adopted the use of cast iron pipes for the house laterals, and the relatively small amount of flow through these sections where such precautions have been taken is sufficiently marked to warrant the recommendation that this method be universally adopted. In the joint sewer recently constructed by Millburn and Summit, the engineers adopted a form of joint similar in composition to that which has been used by the Engineer of the Joint Meeting in recent sewer constructions with splendid results. Comparable results were obtained in this joint sewer constructed for Millburn and Summit, as indicated in an *interim* report presented by your Engineer to the Joint Meeting, and which will probably be read to-night, as it contains a recommendation for the acceptance of this sewer by the Joint Meeting. The extra expense entailed by the use of this special jointing material is fully warranted by the results secured. On the lateral sewers built by Millburn, however, notwithstanding the fact that its engineer, Mr. Halsey, was one of the two engineers on the Millburn-Summit sewer just constructed, the use of the special jointing material has been discarded and reliance placed wholly upon the old cement joints. If this construction is good enough for Millburn's laterals, then unquestionably the extra expense on the Millburn-Summit sewer was unwarranted. It is, however, the opinion of your Engineer, after long experience with this matter, that it was a serious mistake to return to the use of cement joints on the Millburn laterals when more positive means for the elimination of ground water infiltration is now at hand and known to Millburn's engineers.

"Your Engineer has to record the same condition in the sewers in South Orange Township. There the Township Committee acceded to the recommendation of your Engineer to use the special jointing material in order to exclude all ground water possible so as to increase their actual capacity in the Joint Trunk Sewer; yet in sewers built in the Township, and assessed directly against the property owners, cement joints were permitted, and in one stretch where ground water was encountered, leakage at the rate of between 5,000 and 6,000 gallons per mile is recorded, as against 500 gallons per mile where the special jointing material was used.

"It seems to your Engineer that the time has arrived when the Joint Meeting should be clothed with authority to say to the constituent members just what standard of construction will be acceptable. It is not sufficient to say that he will accept any standard of construction provided it does not produce leaky sewers, for there is none of us who does not appreciate the difficulty of preventing the acceptance of a sewer when once constructed, even although the infiltration is greater than we know it would have been had better materials and methods of construction been used.

"This matter is of sufficient importance to demand the earnest attention of the Joint Meeting.

"I present herewith a bill for the time of my assistant engineers upon this investigation.

"Respectfully submitted,

"ALEXANDER POTTER,

"Consulting Engineer to Joint Meeting."

Mr. Allen made a motion, seconded by Mr. Smithers, that those portions of the report affecting Irvington and the City of Newark be called to the attention of those municipalities. So ordered.

Mr. Denman made a motion that in future the Chief Inspector make his reports to the Chief Engineer, who would summarize them for the benefit of the Board. Seconded and so ordered.

The Engineer read an interim report as follows, which was accepted and ordered printed in the minutes:

"May 31, 1912.

"To the Joint Meeting:

"Gentlemen:—At the request of the representatives of Millburn and Summit, I caused to be made an examination of the joint sewer recently constructed conjointly by these two municipalities in Morris Turnpike.

"I find that the sewer has been well constructed and that the leakage from this sewer has been kept down to 2,000 gallons per day, or 1,480 gallons per mile per day, measurements having been made shortly after a protracted rainy spell. This leakage was reduced to 900 gallons per mile per day a week later with little or no intervening rain. As sewers are ordinarily constructed, these tests are very satisfactory. On the South Orange Township sewers constructed last year, the rate of leakage was found to be 400 gallons per mile per day, on a system consisting of 12, 10 and 8-inch pipes. It is fair to state, however, that on our first test, a broken pipe was discovered, which was repaired before the second test was made, but so far as could be determined, that

had no influence on the reduction in the leakage, which, in my judgment, is due to the lowering of the ground water.

"As corroboration of this opinion, a test was made on the upper portion of the sewer, 4,000 feet long. The first test indicated a leakage of 293.7 gallons a day, or at the rate of 378 gallons per mile, whereas the test made one week later indicated a leakage of 146 gallons per day, or at rate of 188 gallons per mile. It should be stated, however, that the upper stretch of this sewer is laid in dry ground, excepting about 100 feet.

"My examination of this work revealed the fact that, while the sewer has been constructed with great care, and a jointing material used that would give good results, Millburn Township's new sewers connecting with this sewer are being laid with ordinary cement joints. Any excellence, therefore, that may exist in the former sewer is rendered more or less valueless because the sewers draining into it are laid with a jointing material that cannot be positively relied upon for good results. I think it is the duty of the Joint Meeting to insist upon the various municipalities using the highest skill and the best materials in laying not only the laterals, but also all house connections, as well. Preventive methods along this line are very much less expensive than curative methods which might be suggested after the sewers are constructed.

"I therefore pass upon the acceptibility of this sewer and recommend that Summit and Millburn be permitted to connect with the Joint Trunk Sewer. As a result of my investigation, I would strongly urge that all municipalities be requested to cease using cement joints in the laying of their laterals when better material is available at a moderate increase in the cost.

"Respectfully submitted,

"Alexander Potter."

Mr. Allen made a motion that the Chief Engineer be requested to draw up a set of standard specifications and send the same to the governing body of each municipality interested in the Joint Trunk Sewer, with the request that they be complied with as far as possible. Seconded and so ordered.

The following letter from Chief Inspector Sandford was then read:

"South Orange, N. J., June 4, 1912.

"Joint Trunk Sewer Commission,

"South Orange, N. J.:

"Gentlemen:—To-day I have completed a term of eight years as Chief Inspector of the Joint Trunk Sewer.

"During this time it has been my earnest desire to serve your Honorable Board faithfully and render such efficient service as would incur as little expense as possible to the Sewer System.

"With this in mind I did all repairing where an expert was not required, including the masonry, on the lowering or raising (as the case might be) of some three hundred manholes. I have taken the best of care of the tools, and particularly, of the 2,000 feet of rope, which are always washed and thoroughly dried before coiling and housed. Without this care and precaution a set of ropes would not last six months, while during the eight years I have had but two sets. About one-third of these are in good condition and the balance nearly worn out.

"As to the sewer, you will of course appreciate the fact that during severe weather and particularly heavy storms the sewer has required immediate attention, which I have given personally, and during my incumbency there has never been any serious stoppage over the entire system, though to keep it in this condition it has been necessary for me to work many Sundays as well as holidays, and I venture to say that had I not been perfectly familiar with points in the sewer most likely to be obstructed during heavy storms, and given these places prompt attention, serious and expensive damage would have resulted, but my whole time and attention is and always has been devoted to the work, being in close touch at all times with every part of the sewer, striving always to keep down the expense of the sewer and hold up the standard of a good system creditable to your Board.

"My assistant (Mr. Corey W. Sandford) I have always found to be sober, reliable and trustworthy, good at his work and ever ready to perform his duties, regardless of time or weather conditions.

"Upon inquiry as to the salaries paid by other municipalities for like positions I have observed that they have been far in excess of ours, as, for instance, the Superintendent of Sewers of Newark receives a salary of $2,100 per year, and his assistant $1,200 per year, on an 8-hour working day with no Sunday or holiday work, also an auto to convey them over the ground and sufficient number of vehicles and assistants to properly care for the work of a great system.

"My salary since appointment has been $100 per month, with a monthly allowance of $26 for supply of horse, wagons, harness, etc., for cartage, which arrangement has, during the past few years, been quite unsatisfactory, inasmuch as the above amount has hardly paid for the actual expense of the horse keep, much less to provide for the purchase of a new outfit, which you, gentlemen, know is necessary every few years.

"In view of the fact that our salaries have never been increased since our appointment, regardless of the decided increase in the high cost of living during the last few years, and in consideration of the faithful services rendered, we feel justified in asking your Honorable Board to grant us an increase in salary,

and we hope, after due consideration, you, gentlemen, may see your way clear to comply with our request.

"Yours very respectfully,

"F. Ross Sandford,
"Chief Inspector.
"Corey W. Sandford,
"Assistant Inspector."

Mr. Smithers moved that F. R. Sandford's rate be increased to $125.00 per month, and that he be allowed $45 per month for expense of horse, etc., effective July 1. A vote by roll call resulted, 5 ayes, no noes.

Mr. Greene moved that C. W. Sandford's rate be increased to $100.00 per month as of July 1st. A vote by roll call resulted, 5 ayes, no noes.

Mr. Greene then made a motion that the salary of the Treasurer and the Secretary be increased $50.00 per year each. A vote by roll call resulted, 5 ayes, no noes.

The Board then went into an election of officers for the ensuing year. The following gentlemen were unanimously elected:

Chairman—Francis Speir, Jr.
Vice-Chairman—A. R. Denman.
Chief Engineer——Alexander Potter.
Counsel—Adrian Riker.
Treasurer—S. H. Rollinson.
Secretary—Arthur Tepper.
Chief Inspector—F. R. Sandford.
Assistant Inspector—C. W. Sandford.

D. H. Greene, J. J. Kenney and E. S. Allen were appointed Auditing Committee.

A resolution was adopted that the Auditing Committee audit the books of the Secretary and Treasurer to April 1, 1912.

The Engineer presented a bill from Oscar W. Palmenburg for $150.00 for expert service in connection with the Drake case. The bill was approved for payment and the Secretary was directed to send bills to Newark, Irvington and South Orange for their pro rata share of the bill.

The Chief Inspector recommended the purchase of 1,000 feet of rope for cleaning sewers. He was authorized to purchase it. A vote by roll call resulting, 5 ayes, no noes.

The following bills were read, approved and ordered paid. Vote by roll call resulting, 5 ayes, no noes:

Arthur Tepper, petty cash	$ 34.00
Arthur Tepper, petty cash	38.00
Arthur Tepper, petty cash	27.18
Arthur Tepper, petty cash	20.50
Alexander Potter, May salary	83.33
F. R. Sandford, May salary	131.00
C. W. Sandford, May salary	75.00
Arthur Tepper, petty cash	18.50
Arthur Tepper, salary and office	93.00
Arthur Tepper, petty cash	21.34
Summit Herald, printing minutes	12.00
N. Y. Telephone Co.	7.75
Patrick Larney, care of Rahway River crossing	10.00
Gilbert Smith, care of Elizabeth River crossing	20.00
S. H. Rollinson, salary	50.00
C. W. Sandford, expense account	6.60
O. W. Palmenburg, expert service	150.00
Alexander Potter, extra expenses	198.00
Alexander Potter, June salary	83.33
F. R. Sandford, June salary	131.00
C. W. Sandford, June salary	75.00

On motion the meeting adjourned.

ARTHUR TEPPER,
Secretary.

Joint Meeting of September 12, 1912.

A meeting of the Joint Meeting was held Thursday, September 12, 1912, at South Orange Village Hall.

Present: Francis Speir, Chairman; Messrs. Denman, of Newark; Smithers, of Millburn; Kenney, of West Orange; Allen, of South Orange, and Clopper, of Summit.

The minutes of the last meeting were approved as printed.

The Engineer read the following report, which was accepted and ordered printed in the minutes:

"September 12, 1912.

"To the Joint Meeting:

"Gentlemen:—Since the last Joint Meeting we have continued our investigation in connection with the possible improper use of the sewers in the various towns contributing to the mains of

the Joint Trunk Sewer. It will be recalled that in the territory examined prior to the last meeting, a great many houses were found to have roof-leaders connected with the sanitary sewers. This was particularly the case in the Lyons Avenue district of Newark, and Vailsburg districts, and parts of Irvington. I communicated the results of these investigations to the municipalities in question, asking them to take action looking towards the abatement of this trouble, but so far I have not been advised by these municipalities as to what action they have taken.

"I have continued my investigation over the other parts of the Joint Trunk Sewer, and I am pleased to state that although as faithful and careful an examination has been conducted over the portion of the system of laterals not included in the first report, relatively few house-leaders or improper connections have been found to the lateral sewers. This investigation has covered portions of South Orange Village, West Orange, the remainder of Irvington and parts of Millburn.

"The investigation so far made covers those portions of the sewer upon which there has been complaint of excessive sewer flow.

"At the last meeting, I was requested to prepare a general form of specification for sewer construction which might be adopted by all the municipalities using the Joint Trunk Sewer. I beg to state that I have been at work upon this specification and will submit a tentative draft of it in the near future to the local engineers of the various towns for their criticism and suggestion in the hope that some standard may be adopted for general use throughout this territory.

"I beg to call the attention of the Joint Meeting to the attitude that the City of Elizabeth has taken in reference to the use of the lower portion of the sewer below the terminus of the 42-inch strictly sanitary sewer. They have assumed that over this portion of the sewer they have the right of entry without notification to the Joint Meeting. The last letter from the Street Commissioner and my reply thereto give you the present status of the situation. I have conferred with Mr. Riker in reference to this matter, and he endorses the stand taken by me in reference to this matter.

"The report of the Chief Inspector has been submitted to me, and I am pleased to report that nothing unusual has occurred in connection with the Joint Trunk Sewer since the last report was made. A part of the time of the inspectors was taken up in the investigation with my assistant engineer looking for leaks and roof-water connections. While on this investigation, Mr. Corey Sandford, the Assistant Inspector, was injured in removing the covers from the manholes, and was confined to his house for several days. This inspection of the sewer with my assistant engineer covered the period from June 22nd to July 10th.

"The Chief Inspector reports that two new manholes which have been built in the Dorer tract in connection with lateral sewers of the Joint Trunk Sewer were found by him to be completely filled with stones put in by mischievous boys. The Inspector has no lock manhole covers on hand to replace the covers on these two manholes, and I would recommend the purchase of ten additional lock manhole covers. I would recommend that the Secretary be ordered to place an order with the Sessions Foundry Company for ten additional lock manhole covers provided they can be purchased at the same rate as similar manhole covers heretofore purchased by the Joint Meeting.

"It is gratifying to note that not in a single instance where a lock cover has been used has there been any successful attempt to enter the sewer for the purpose of interference therewith.

"The Chief Inspector utilizes the covers replaced by lock covers to replace old and worn-out covers on streets throughout the system.

"I desire to call the attention of the Joint Meeting to the fact that the Chief Inspector requested permission to leave his work for a day's holiday, and I granted his request. So far, Mr. Sandford has not taken this day. This is mentioned at this time because of the incorrect and improper statement made in the paper to the effect that Mr. Sandford had actually been out of the State for a period of two weeks. As a matter of fact, Mr. Sandford has not been away from the work for a whole day at a time since the last meeting.

"I submit herewith the Inspector's report covering the period mentioned, for filing with the Secretary.

"I beg to report that the joint storm drain being built by Newark and East Orange through the Vailsburg section has been started. This will greatly relieve the sanitary sewers in this district from ground-water infiltration.

"The material for the joint sewer being built by Irvington and Newark to relieve the Nineteenth Avenue section of the city is on the ground and work is to be started in the near future.

"When these two storm drains are constructed, they will greatly relieve the situation through Irvington so far as the surcharging of the sewers is concerned.

"I desire to call your attention to a new complaint raised by the Second Ward Improvement Association in Irvington as to odors arising from the sewer in Augusta Street. As reported on numerous occasions by myself, and also as reported by the Joint Commission of Engineers who investigated this matter three or four years ago, which Commission consisted of the engineer for the City of Newark, the engineer for the Town of Irvington, and the Chief Engineer of the Joint Trunk Sewer, no relief can be had from this odor until such time as the people along this

street will remove the traps between the sewer and house connection and give an opportunity for the direct ventilation of this sewer to the roofs. When this is done, there will be no further complaint about odors rising from this sewer.

"Respectfully submitted,

"ALEXANDER POTTER."

"Elizabeth N. J., August 27, 1912.

"Mr. Alexander Potter,
"No. 114 Liberty Street,
"New York City.

"Dear Sir:—Your communication addressed to the City Clerk was referred to me for reply. Two connections were made in the Bayway sewer within the past two weeks, as stated in your letter, and in all cases Mr. F. R. Sandford is notified at South Orange a few days in advance.

"It is customary to notify him by mail of connections made in the Joint Municipality Sewer, and we try to reach him in all cases where connections are thus made.

"As to the basins, they are below Woodbridge Avenue, where the City has unlimited capacity according to the ordinance and we claim that no notification is necessary in that location.

"Very truly yours,
"WM. P. NEAFSEY,
"Street Commissioner,
"Per Sayre."

"New York, September 4, 1912.

"Mr. W. P. Neafsey,
"Street Commissioner,
"City Hall, Elizabeth, N. J.:

"Dear Sir:—Your letter of August 27th is before me.

"If you will take the trouble to read the contract between the Joint Meeting and the City of Elizabeth, you will find that so far as having access to the sewer is concerned for the purpose of making taps, there is no distinction between that portion of the Joint Trunk Sewer above and that portion below Woodbridge Avenue. Below Woodbridge Avenue, according to the contract, the City of Elizabeth has the right to discharge sewage and storm water, and above Woodbridge Avenue it has the right to discharge not to exceed 100,000 cubic feet of sewage per day.

"In making connections to the sewer below Woodbridge Avenue, you will be good enough to send Mr. Sandford the same notification as you do when making connections above Woodbridge Avenue.

"Yours very truly,
"ALEXANDER POTTER."

A recommendation was made that the Secretary order 10 manhole covers from the Sessions Foundry Co., same as have been used, at a price not to exceed the price of the last ones purchased from the Sessions Foundry Co. So ordered.

The Treasurer read the following report, which was accepted and ordered placed on the minutes:

"To the Various Municipalities Comprising the Joint Sewer Meeting:

"Gentlemen:—The Treasurer respectfully reports that on the twenty-first day of June, nineteen hundred and twelve, the date of his last report, he had on deposit in the Orange National Bank the sum of one thousand and seventy-eight dollars and fifty-seven cents ($1,078.57), with no warrants outstanding, since which time he has been credited with the sum of six dollars and seventy-one cents ($6.71) interest, making a total of cash on hand of one thousand and eighty-five dollars and twenty-eight cents ($1,085.28).

"He has paid out in vouchers since the date of his last report, as shown on an itemized statement hereunto annexed, the sum of one thousand six hundred and fifty-nine dollars and nineteen cents ($1,659.19), thereby overdrawing his account in said bank to the amount of five hundred and seventy-three dollars and ninety-one cents ($573.91). In overdrawing the said account the Treasurer brought the matter to the attention of the officers of the Orange National Bank, and on due explanation of the situation secured permission to overdraw his account as above set forth.

"All of which is respectfully submitted this twelfth day of September, nineteen hundred and twelve.

"Simeon H. Rollinson,
"Treasurer."

The Secretary read the following letters which he had sent according to instructions given at last meeting:

"Board of Street and Water Commissioners,
"Newark, N. J.:

"Gentlemen:—At a meeting of the Joint Meeting, held June 21, 1912, the following resolution was passed:

" 'That the portions of the Engineer's report affecting the City of Newark and Town of Irvington be called to the attention of those municipalities.'

"Accordingly enclosed herewith please find a copy of the Engineer's report with the section alluded to marked with red.

"Yours respectfully,
"Arthur Tepper,
"Secretary."

"The Mayor and Common Council,
"Irvington, N. J.:

"Gentlemen:—At a meeting of the Joint Meeting, held June 21, 1912, the following resolution was passed:

" 'That the portions of the Engineer's report affecting the City of Newark and Town of Irvington be called to the attention of those municipalities.'

"Accordingly enclosed herewith please find a copy of the Engineer's report with the section alluded to marked with red

"Yours respectfully,
"ARTHUR TEPPER,
"Secretary."

Also the following reply received from Newark:

"Mr. Arthur Tepper, Secretary,
"Summit, New Jersey:

"Dear Sir:—I beg to acknowledge receipt of your letter of August 13th, 1912, inclosing copy of Engineer's report on inspection of Joint Sewer with portions affecting Newark marked with red, and to state that the same was duly presented to the Board at its meeting yesterday and referred to Sewer Committee.

"Yours respectfully,
"A. L. SWAIN,
"Acting Clerk of the Board."

The Secretary read the following report:

"Millburn, N. J., Sept. 12, 1912.

"To the Joint Sewer Meeting:

"Gentlemen:—Enclosed you will find balance sheet for the year ending April 1, 1912, which I trust you will find satisfactory.

"The expenses were increased on July 1, 1912, as follows:

Engineer's salary	$1,000.00	$1,000.00
Chief Inspector's salary and horse	1,572.00	2,040.00
Assistant Inspector's salary	900.00	1,200.00
Treasurer's salary	200.00	250.00
Secretary's salary	300.00	350.00
Office rent	48.00	72.00
Executive Committee	300.00	300.00
	$4,320.00	$5,212.00
Leaving for labor, etc.	1,780.00	888.00
	$6,100.00	$6,100.00

"This you will find reduces the balance left for labor in maintaining the sewer by $900.00. Would it not be advisable to consider an increase in the budget on January 1 next?

"Yours respectfully,
"ARTHUR TEPPER,
"Secretary."

Balance Sheet—April 1, 1912.

Folio.	$2,256.38		Cash.	
5	100.00		Petty cash.	
26			Maintenance account .	$2,483.44
50			Interest	31.54
52	300.00		Town of Irvington.	
61			J. P. Hall	100.00
63			Earle & Dougherty ..	41.40
	$2,656.38			$2,656.38

The following bills were read, approved and ordered paid. Vote by roll call resulting: 5 ayes, no noes:

Arthur Tepper, petty cash	$ 16.00
Alexander Potter, July salary	83.34
F. R. Sandford, July salary and horse	170.00
C. W. Sandford, July salary	100.00
Alexander Potter, August salary	83.33
F. R. Sandford, August salary and horse ..	170.00
C. W. Sandford, August salary	100.00
Summit Herald, printing minutes	18.00
Jackson Awning Co.	66.25
John Ward & Son	12.25
New York Telephone Co.	9.85
S. H. Rollinson, salary	62.50
Arthur Tepper	105.50
Alexander Potter, September salary	83.34
F. R. Sandford, September salary and horse	170.00
C. W. Sandford, September salary	100.00

The following resolution was made for assessments for maintenance for the second and third quarters of year 1912:

"Resolved, That the several municipalities do raise and pay to the Treasurer of the Joint Meeting the sum of $3,050.00, which shall be assessed upon the joint municipalities in the proportion fixed by the contract between the several municipalities as provided for the care and maintenance of the Joint Sewer, i. e., each municipality paying an equal amount, or one-seventh of such assessment (excepting the City of Newark, which shall pay two-sevenths, or one-seventh for Newark and one-seventh for Vailsburg); and, further, that the Secretary be directed to notify the various municipalities of such assessment and the proportion to be paid by each; and be it further

"Resolved, That the said moneys be paid to the Treasurer of the Joint Meeting within twenty days of the 12th day of September."

A vote by roll call resulting: 5 ayes, no noes.

The following recommendation was made, seconded and carried:

"Resolved, That the amount to be assessed for the maintenance of the Joint Sewer for the year 1913 be fixed at $7,000.00."

The Secretary was instructed to notify the various municipalities of the amount so fixed.

On motion the meeting adjourned.

ARTHUR TEPPER,
Secretary.

Joint Meeting of November 7, 1912.

A meeting of the Joint Meeting held Thursday evening, November 7, 1912, in South Orange Village Hall.

Present: Francis Speir, Chairman; Messrs. Denman, of Newark; Greene, of Irvington; Kenney, of West Orange; Allen, of South Orange, and Clopper, of Summit.

The minutes of the last meeting were approved as printed.

The following report was read by the Engineer, accepted and ordered printed in the minutes:

"November 7, 1912.

"To the Joint Meeting:

"Gentlemen:—I submit herewith copy of a specification which I am transmitting to the various town engineers of the municipalities connected with the Joint Trunk Sewer.

"I also present herewith a bill from E. C. Cattley, an assistant engineer engaged upon the investigation of house connections and roof leaders. This service was rendered after the presentation of the last statement to the Joint Meeting.

"The construction of the storm sewer through the Vailsburg and Irvington section is well under way, and a decided improvement should soon be felt throughout those sections of the Joint Trunk Sewer which have been affected by storm water. The gauge records recently removed from the sewers thus affected clearly indicate the necessity of this relief.

"No word has been received from the governing bodies of the towns who have been notified of the improper use that is being made of the sewers to carry off roof water.

"The Township of South Orange some months ago made application for a sewer connection at a point in Millburn Avenue near the crossing of the Rahway River. The construction of a sewer to this point would divert the sewage from a large territory in South Orange Township to this point. The Township

asked permission of the Joint Meeting to recognize this discharge as chargeable against the quota purchased from Millburn, so as to permit of a greater number of connections throughout the remaining territory which could be charged against the quota negotiated by South Orange Township from South Orange Village.

"While Millburn discharges the sewage of a relatively small section of its territory into the Joint Trunk Sewer at this point, as a matter of fact I doubt whether Millburn has any legal right to discharge any of its sewage into this portion of the joint sewer, as its legal ownership in the joint sewer does not begin until the point 'A' of the original contract has been reached. The point 'A' is distant from the intersection of Millburn Avenue and the Rahway River about 1,430 feet.

"If the Township of South Orange requires this readjustment in the point of discharge of its sewage, it will become necessary for it to build an independent sewer line from the Rahway River to the point 'A.'

"I submit herewith a copy of the Inspector's report. Inspector Sandford reports that nothing unusual has occurred upon the sewer since the last meeting outside of general routine work.

"I have no report to make in connection with the Roselle Park matter. I have written to the officials of that Borough on numerous occasions, but my letters have failed to elicit a reply from any of them. Mr. Riker advised me that he expects to be present at the meeting, and hopes to make some report on this matter at that time.

"Respectfully submitted,

"Alexander Potter."

Suggestion for a Uniform Specification to Be Used by the Various Municipalities Using the Joint Trunk Sewer in Essex and Union Counties, New Jersey.

By

Alexander Potter,

Chief Engineer, Joint Trunk Sewer.

(Note.—These specifications are submitted in compliance with a resolution of the Joint Meeting. While the principal object of these specifications was to secure more water-tight sewers, it has been thought best to include, for this discussion, the specifications for excavation and backfilling, as the stability of the sewer oftentimes depends upon the methods used in excavating and backfilling.

These specifications suggest that the final restoration of the streets be taken out of the hands of the contractor, and assumed by the city. This should evoke discussion.

As pipe laying proper is a matter largely of the personal equation of the man actually laying the pipe, the success of the sewer is measured by the extent of the leakage in the sewer. The quantities of leakage specified are higher than has been attained under unfavorable conditions in the writer's practice, but the quantities herein stated do not seriously impair the carrying capacity of the sewers.

These specifications cover the construction of manholes, as it is safe to say that much leakage occurs in the sewers at the junction between the manholes and the sewer barrel proper.)

SPECIFICATIONS.

Excavation.

Items 1, 2 and 3.

Item 1 shall include all stone boulders and detached pieces of rock lying in separate masses more than 3 cubic feet and less than 1 cubic yard; also all slate, shale, soap-stone, cemented gravel, coarse boulders in gravel or hard pan.

Item 2 shall include detached pieces of rock, or boulders 1 cubic yard or more in contents and all masses of solid rock, well defined ledges of stone or masses of rock.

Under Item 3 shall be included only the material commonly known as quicksand; viz., the combination of a very fine sand with water, in such proportions as to form a semi-fluid mass.

Open Cut. All trench excavations shall be made in open cut from the surface, except where tunneling is shown on the plans, or is expressly permitted or directed by the engineer. Where tunneling is called for it will be measured and paid for by the lineal foot. Whenever practicable, the excavation for the sewer shall be made to conform with the exact grade of the sewer; but if in the opinion of the engineer, it is impracticable to do this, the excavation shall be made in accordance with the directions given by the engineer.

Slope. The sides of the excavation in open cut may, in all ordinary cases, be carried to the surface at such a slope as the contractor may desire, but the amount of the excavation will be computed and paid for upon a basis of vertical side walls, and a width of trench 4′ for a 24-inch pipe, 3′ 6″ for a 20-inch pipe, and 3′ for all others. The depth of the sewer in earth and loose excavation shall be measured to the invert.

Trenches Must be Properly Braced When Necessary. Where necessary the sides of the trench must be braced and rendered secure to the satisfaction of the engineer until the sewer has been laid and the trenches refilled as hereinafter specified, to the depth of at least one foot above the top of the sewer. All bracing or sheet piling shall be done at the contractor's expense, and no extra compensation allowed therefor; except where such timber is left in the trench by the written order of the engineer, when $27.50 per thousand feet B. M. will be paid.

Quicksand. Where running sand, quicksand, or other semi-fluid material equally difficult to handle is encountered, the contractor shall use close sheeting and suitable bracing which must be of proper form and dimensions. Such material shall be classified as quicksand, and paid for, under Item 3, at the rate of $1.50 per cubic yard, measured in the trench. The engineer shall determine what material shall be so classified.

Loose Rock. Wherever it is impracticable to measure loose rock in the trench, the contractor shall pile all loose rock neatly on top of the trench, where it will be measured by the engineer. The quantity of loose rock to be paid for shall be assumed to be 72% of the volume thus measured.

Solid Rock. When solid rock is encountered in the trench, it shall be stripped of earth and the engineer notified and given proper time to measure the same before blasting. All rock removed which has been measured by the engineer, will be estimated under Item 2. In all cases of blasting the blast is to be covered carefully with heavy timber to the satisfaction of the engineer. No blasting shall be done within forty feet of the finished sewer, or ten feet of an uncovered gas or water main.

Extent of Rock Excavation. At no point shall the rock come within six (6) inches of the greatest external diameter of the sewer measured horizontally, and it shall be excavated in the bottom of the trench to such a depth that no part of the rock comes nearer than four (4) inches below any portion of the outside of the sewer. The amount of solid rock excavation shall be measured to six (6) inches below the invert, and based on the width of trench specified under "Slope".

Buildings Shall be Protected. The contractor shall, at his own expense, shore up and otherwise protect any building, stable or outhouse which may, in the opinion of the engineer, be endangered during the work; and is to make good as when

found all buildings, fences, walls or other property disturbed during the work.

Crossings to be Kept Open. At such street crossings and other intermediate points as may be designated by the engineer, the trenches shall be bridged in such proper and secure manner as to prevent any serious interruptions of travel upon the roadways and sidewalks, the cost thereof to be borne by the contractor.

Unfinished Work Must be Protected. Before leaving the work for the night, or during a storm or at any other time, care must be taken to securely protect the unfinished end of the sewer; and any earth or material that may find entrance into the sewer through any such opening or unplugged branch must be removed at the contractor's expense. The cost of all labor connected therewith must be included in the regular prices bid for the sewer.

Lights Must be Kept Burning. The contractor must place sufficient lights on or near the work and keep them burning from twilight to sunrise, and shall erect suitable railings or protection about the open trench, and provide all necessary watchmen on the work by day or by night for the safety of the public.

Material Must Not be Removed by Contractor. The contractor shall not, without written permission of the engineer, remove from the line of the work any sand, gravel or earth excavated therefrom which may be suitable for refilling the trenches until the same shall have been refilled, except by permission of the engineer.

Bottom of Trench Must be Properly Graded. The bottom of all trenches shall be carefully and truly graded, formed and aligned according to the grade, before any sewers are laid therein.

Trenches Shall be Kept Dry. The contractors shall pump, bail or otherwise remove any water which shall be found or shall accumulate in the trenches, and shall perform all work necessary to keep them clear of water, while the foundations and the masonry are being constructed, or the sewer laid. In no case, unless by special permission of the engineer in writing, will the water be allowed to run over the invert or foundations unless the jointing material is thoroughly hardened.

Existing Construction Must be Cared For. In excavating the trenches or laying the sewer, care must be taken not to remove or injure any gas, sewer or other pipes, conduit or construction without the written order of the engineer. Should it become necessary to interfere with or change the position of such pipe, conduit or construction, the engineer shall at once be notified of the locality and circumstances, and shall thereupon give directions as to what shall be done, and the contractor shall conform thereto, and shall be allowed for material furnished and for labor performed in connection with such interference, or upon such change upon the estimate of the engineer in so far as it may be in addition to that contemplated by these specifications. The contractor shall be responsible for all injuries to persons or properties, for all damages to any pipe, conduit, sewer or structure injuriously affected by the work, and the city shall not be liable therefor.

Interference with Railroads. Wherever any railway or street railway is to be crossed or interfered with, notice shall be given to the superintendent to confer with the engineer, and directions shall be issued as to the time and manner of doing this work, and the contractor shall conform to such directions, and he shall be allowed for material furnished and made part of the finished construction, but all other work shall be done at his own cost. The contractor shall be responsible for all injuries or damages to persons or property inflicted or caused by said work.

Disposal of Material. Excavated material must be so placed as not to interfere with travel on the streets nor incommode occupants of adjoining property. Trenches shall not be opened more than 300 feet in advance of the laying of the sewer, unless by direction of the engineer.

Surplus Earth. Surplus earth within a distance of one thousand (1,000) feet from the place where it is excavated, following the route of travel, shall be hauled to such places as the engineer may designate and used to fill streets, alleys or lots, unless needed for making embankments along the sewer. If no place is designated the contractor shall dispose of surplus earth at his own expense.

To take Care of Surface Drainage. The contractor shall provide at his own expense and cost for the uninterrupted flow of all water-courses, sewers and drains encountered during the progress of the work. Whenever any water-course is crossed by a sewer, concrete bulkheads shall be built to prevent the flow of the water along same.

Backfilling. (Time.) Backfilling shall follow directly after the construction of the sewer, and in no case shall it be more than one hundred (100) feet in the rear of the completed sewer pipe.

(Manner.) The filling of the earth around the sewer and above it to a depth of one foot shall be done with utmost care so as not to disturb the newly laid work, and with specially designed tampers, in a manner to obtain compactness and solidity. The remainder of the backfilling across private property shall be done with ordinary care, but the material need not be tamped or flushed. The contractor shall be required, however, to refill the ditches as settlements occur along the line of the work from time to time, and to maintain them flush with the surface of the adjoining ground until the final acceptance of this contract. At street and road crossings, and along any country road over which the sewer may pass, the remainder of the backfilling shall be carefully tamped to the satisfaction of the engineer. When the sewer is under a paved street, the entire backfilling must be tamped with at least two tampers to one shoveler, and in addition to this, the trench shall be flushed.

Restoration of Street Surfaces. In streets improved with any permanent pavement, the trench shall be thoroughly braced so as not to disturb the pavement adjacent to the trench. After the backfilling has been replaced in accordance with the specifications, the contractor shall replace the pavement temporarily and place and maintain the street in a passable condition to the satisfaction of the Highway Commissioner. The permanent restoration of the pavement will be made by the Commissioner of Highways, but not until the trench has been thoroughly settled.

If any new materials are needed for such temporary restoration work, they shall be of the best quality, and shall be furnished and placed by the contractor without extra compensation.

Restoration of Surface of Ground. All the work of refilling sunken ditches, repaving over trenches and keeping streets and alleys in passable condition, shall be done to the satisfaction of the engineer during the construction of the work as well as during the maintenance period. If any work is not done within five (5) days after written notice given by the engineer, the work may be done by the engineer and charged to the contractor.

Payment. The price bid for excavation under Items 1 and 2 shall be an additional price per cubic yard over and above the price bid per cubic yard of earth excavation included under Item 4, "Vitrified Pipe Sewer". The cost of ordinary earth excavation and refilling the trenches, restoring the surface of the streets, alleys, sidewalks and private right-of-way, hauling away surplus material, pumping, bailing, bracing and shoring, and removing trees, shrubbery and like obstructions encountered, shall be included in the price bid under Item 4.

Vitrified Pipe.

Item 4.

In these specifications straight sections will be termed "pipe," and branches, bends, reducers, etc., will be called "specials".

Quality. Pipes and specials shall be constructed of the best quality of salt glazed, vitrified stoneware sewer pipe.

Dimensions. The dimensions of the pipe required shall be substantially as follows:

Calibre.	Thickness.	Socket.	Space.	Weight, per Ft.	Length.
24″	2″	4″	5/8″	190 #	2′ 6″–3′
20″	1 2/3″	3 1/2″	"	135 #	" "
18″	1 1/2″	3 1/4″	"	107 #	" "
15″	1 1/4″	3″	"	75 #	" "
12″	1″	3″	"	46 #	" "
10″	7/8″	2 3/4″	"	36 #	" "
8″	3/4″	"	"	25 #	" "

In specifying these dimensions it is not the intention to bar any manufacturer whose dies may vary slightly from the dimensions named. These weights and dimensions are intended to secure deep socket double strength pipe.

Pipes Must be Truly Cylindrical. All pipes must be so truly cylindrical that the hub or sockets must freely receive the spigot end of the next following pipe or special without any chipping whatsoever of either; pipes and specials which cannot thus be freely fitted into each other shall be rejected.

Defects. The body and bell of the pipe shall be burned thoroughly and hard. Fire cracks, blisters and iron pimples are to be avoided, but they shall not necessarily cause the rejection of the pipe. The engineer shall be final arbiter as to what pipes shall be rejected from these causes. All pipes having transportation, cooling, frost or other cracks, not fire cracks, shall be immediately rejected.

Corrugations. All pipes shall be made with corrugations on the outside of the spigot end and the interior of the bell.

Pipes to be Straight. All pipes and specials which are designed to be straight shall not exhibit any material deviation from a straight line. Especially, curves or bends shall substantially conform to the degree of curvature and general dimensions that may be required. The interior of the pipes and specials shall be smooth and thoroughly glazed.

Inspection. The pipes and specials as they are taken from the car by the sewer contractor shall be carefully inspected and culled by the contractor for the purpose of determining whether the pipes required by the foregoing specifications have been delivered by the manufacturer. All pipes failing to pass the inspection will be destroyed or moved to a yard, there to remain until the completion of the entire shipment of pipe.

Pipe Laying.

Pipes and Specials to be Inspected Immediately Before Laying. Previous to laying the pipes and specials which have been delivered upon the streets into the trenches, they shall be subjected to rigid inspection and those which do not meet the requirements as set forth in the specifications under which the pipe is furnished shall not be used.

Line of Sewer to be Straight. The pipes and specials shall be so laid in the trench that after the sewer is completed, the interior surface thereof shall conform accurately to the grades and alignments fixed and given by the engineer.

Lights Between Manholes. When the pipes and specials are being laid in each section between manholes, light from the remote end of the section shall remain in plain view throughout the entire length of such section or division. Sections between manholes will in general not exceed three hundred feet; in particular cases it must be somewhat shorter.

Instructions as to Pipe Laying. Before jointing, the interior of the joints shall be carefully wiped smooth, and the annular space must be completely cleansed of dirt, stone or water; a narrow gasket of oakum or hemp, dipped in cement grout, shall be properly caulked into each joint, after which the cement mortar shall be thoroughly packed therein. No joint shall be cemented until the gasket of the next joint in advance is properly inserted. Spe-

cial care to properly fill the annular space at the bottom and sides as well as the top of joint with a stiff mortar made of one part of cement to one part of sand, must be taken, and same inspected by the fingers. After such space has been filled as described, a second gasket of oakum must be caulked into the joint by the further application of the same mortar to the even beveled space from the exterior of said socket to the exterior of the body of the pipe all around. The interior of the joint shall be wiped clean of cement by a rubber disc or other approved device. A swab of straw or other suitable device of slightly greater diameter than that of the pipe must be kept in the finished sewer and pulled ahead as each length of pipe is laid so as to remove any earth or stones which may have found lodgment therein. While pipe laying is in progress and after each joint is made as herein described, the contractor shall keep the trench clear of water until the cement is properly set. Water shall not be allowed to rise in the trench to reach the cement before it has hardened to the satisfaction of the engineer, unless his written consent is secured to deviate in any special case.

Contractor Not Limited to Any Special Jointing Material.

In the use of joint filling material, the contractor will not be limited to any particular filling medium. Cement joints with a gasket of oakum, properly applied in accordance with these specifications, will be permitted, subject to the following guarantee for leakage. A flexible jointing material which shall receive the approval of the engineer before it is brought on the ground will be permitted. Any such material shall be free from any matter which would cause its disintegration when exposed to the conditions under which it is to be used. No jointing material shall be used concerning which the manufacturer cannot cite cases where it has been in use under somewhat similar service for at least a year.

Permissible Leakage.

The following maximum leakages are permissible:

24″	pipe	at	the	rate	of	6,000	gals.	a	mile	daily.
20″	“	“	“	“	“	5,000	“	“	“	“
18″	“	“	“	“	“	4,000	“	“	“	“
15″	“	“	“	“	“	2,500	“	“	“	“
12″	“	“	“	“	“	2,000	“	“	“	“
10″	“	“	“	“	“	2,000	“	“	“	“
8″	“	“	“	“	“	2,000	“	“	“	“

For stretches not exceeding a thousand feet an infiltration of fifty per cent. (50%) in excess of the figures given above will be permissible, provided the total volume per mile is not exceeded in any one mile.

Tests for Leakage. In all the details of pipe laying the utmost care shall be taken to secure the highest possible degree of water-tightness in all of the sewers. At the option of the engineer any one or any number of sections between manholes shall be tested by flooding the trench to the surface of the street after the backfilling has been substantially completed.

No part of the sewer shall be deemed to have been tested until subjected to an external or internal pressure of at least five feet. Where an internal pressure is applied the flooding, while desirable, is not mandatory. Over those portions of the sewer where a public water supply does not extend, the test shall be made by plugging the lower end of a certain section, filling the sewer with water, and observing the leakage measured by the drop in water level in the upper manhole.

Inspectors to be Present. To insure proper pipe laying, the inspector shall be present either while the pipe is being laid or before it is covered up. To prevent injury to the pipe by blasting, and to insure proper sewer construction, the trench must be bottomed out in advance of pipe laying, and in rock cuts the broken stone foundation laid before pipe laying on any stretch is commenced. When sufficient bottom has been prepared in advance, the pipe shall be laid continuously up to within nine (9) feet of where the ditch has been brought to the approximate grade. The pipe laying shall then cease and the pipe be carefully covered up and protected, and pipe laying shall not be resumed again until another stretch of bottom has been prepared for the reception of the pipe. The engineer shall determine from time to time the length of such bottom sections.

Specials Must be Inserted. As the work proceeds all required specials that are indicated on the plans or that may be required during the progress of the work shall be introduced and set in their proper positions. Any omission of the required specials intended to be laid or that may be specially ordered beforehand by the engineer, shall be corrected by the contractor without compensation, other than the contract prices for such sewer work.

Payment for Pipe Sewers. Pipe sewers will be paid for by the lineal foot of finished work, measurements being taken from center to center of manholes, including all specials.

The price bid per lineal foot of pipe sewer under this item shall include all labor and material and all ordinary earth excavation necessary to build the sewer in accordance with the standard section shown on the drawings.

In making the classification, the depth of the sewer shall be taken as the distance from the surface of the ground to the invert. The length shall be taken from center to center of manholes, including all specials.

Manholes.

Item 5.

Manholes of the form and dimensions specified by the engineer and according to plans furnished by him, shall be built of concrete by the contractor at such places as the engineer may designate.

The concrete for manholes shall be mixed in the proportion of one part of Portland cement, two parts of good clean, sharp sand, and four parts of screened stone of such size that all of it can be passed through a 2-inch ring and be retained on a 1/4-inch mesh screen.

When ordered by the engineer there shall be used a plank flooring under the concrete foundation, which shall be paid for as timber in foundation under Item —.

Horizontal construction joints shall be avoided wherever possible. The joint between the concrete bottom and the sides of the manhole must be carefully made. To render this joint and other construction joints water-tight, a semi-liquid 1:2 mortar shall be spread just before concreting is started to the depth of half an inch over the old surface, but not before the old concrete work has been thoroughly cleaned with water and wire brushes.

When water is encountered in the bottom of a manhole, a pump shall be maintained and the water kept down by pumping until the masonry has set.

Every manhole is to be fully and completely built and fitted with 3/4-inch galvanized wrought iron steps, cast iron head and cover as the work progresses, and as each is reached. No back-

filling shall be placed around any manhole until the same has been inspected by the engineer or inspector.

Covers. The contractor shall furnish and set in place on all manholes, iron covers of the form and dimensions shown on plans. The metal for the manhole head and cover shall be made without any admixture of cinder iron or other inferior metal, and shall be of such character as to make a casting strong, tough and of even grain, that will satisfactorily admit of drilling and cutting. The castings shall be allowed to remain in the sand a sufficient length of time to prevent unequal contraction. The castings shall be free from sand holes, cold shorts, scabs and defects of every nature; no plugging or filling will be allowed; they shall be thoroughly cleansed and no lumps or rough places shall be left on the castings.

Lock manhole covers shall be provided where specified. All other manholes shall be provided with standard covers.

Unless fixed by street grades or other conditions, all manholes shall be carried to a height of at least 4 feet 9 1/4 inches above the footing course.

Manholes shall be built as rapidly as the construction of the sewer will permit.

Payment. Manholes will be paid for at a lump sum price for each manhole complete, including ordinary earth excavation, galvanized wrought iron steps, cast iron heads and covers, and concrete foundation to and including a depth of 10 feet to be measured from the flow line. For each foot or fraction thereof by which the depth of manhole exceeds 10 feet, an additional sum amounting to ten per cent. of the amount bid for each manhole shall be added.

Flush Tanks.

Item 6.

Flush tanks of the form and dimensions shown on the plans shall be built by the contractor at such places as the engineer may designate.

Flush tanks shall be constructed of concrete in accordance with the specifications for the construction of manholes.

Special precautions must be taken to render all flush tanks absolutely water-tight. Each flush tank shall receive on the inside two coats of neat cement wash, the second coat to be applied before the first has had time to dry out.

Every flush tank shall be fully and completely built, with galvanized wrought iron steps, cast iron head and covers similar to those called for for manholes. Each flush tank shall be furnished with a 6-inch siphon of an acceptable design. Preference will be given to some type of flush tank device which permits of the inspection of the sewer through the flush tank. The flush tank will be equipped with a flush tank regulator of an acceptable design, for controlling the supply of water to the tank, and adjusted to give one discharge daily.

A 1/2-inch lead-lined connection shall be made with the street water main where it lies within 15 feet of the flush tank, and the cost of such connection must be included in the price bid for flush tanks. Where the connection is more than 15 feet long, a price of thirty cents (30c.) per foot will be paid for such additional length.

Payment. Flush tanks will be paid for at a lump sum price for each flush tank complete, including galvanized wrought iron steps, cast iron head and cover, six-inch siphon, all ordinary earth excavation, flush tank regulator, and 15 feet of 1/2-inch lead-lined connection to existing water main.

4″ Branches.

Item 7.

At such places as will be designated by the engineer, "T" branches shall be inserted in the sewers for house connections. The size of such "T" branches shall in general be four (4) inches. The branches shall be paid for at an additional price over straight pipe, and such price must include the cost of furnishing and placing a vitrified cover in said branch.

Marking Rods. 1-in. x 2-in. marking rods will be placed in each branch and shall extend from the sewer to six (6) inches above the street surface. The price of these markers shall be included in the price bid for "T" branches.

Gravel or Broken Stone Foundation in Rock Cut.

Item 8.

In rock cut the excavations shall extend six inches below the grade of the outer curved bottom of the sewer. The trench shall then be filled up to the required grade and shape with gravel or broken stone of such size that all of it can be passed through a two-inch ring.

Payment. The price bid under this item shall include the cost of furnishing, delivering and placing per lineal foot of pipe laid in rock trench, the gravel or broken stone foundation called for.

Cast Iron Pipe.

Item 9.

Wherever shown on the plans or directed by the engineer, the contractor shall furnish and lay cast iron pipe of Class A, of the same diameter as the pipe called for on the plans and profiles. All cast iron pipe shall be manufactured in all respects in accordance with, and shall meet the requirements of the Standard Specifications for Cast Iron Pipe and Special Castings of the American Water Works Association, adopted in 1908. All cast iron pipe shall be laid with lead joints. The first six joints in the vitrified pipe on either side of the cast iron pipe must be made with flexible jointing material.

Payment. The price bid per lineal foot of cast iron pipe shall include all labor and material to furnish and lay the pipe in accordance with the plans and specifications. This price shall be an additional price over and above that paid for vitrified pipe sewer of the same classification.

Mr. Adrian Riker, the Counsel for the Joint Meeting, was present and said that while Roselle Park has repeatedly promised to send a check, none has been received by him as yet. He will take the matter up for settlement with the Mayor of Roselle Park at once.

Mr. Riker asked that a committee be appointed to take up with the Engineer and Counsel as to the advisability and desirability of additional legislation.

The Chairman appointed the representatives of Newark, South Orange and Irvington, of which committee the Chairman of the Joint Meeting shall be a member ex-officio.

The Treasurer's report was read, accepted and ordered placed in the minutes:

"To the Various Municipalities Comprising the Joint Sewer Meeting:

"Gentlemen:—The Treasurer respectfully reports, that on the Twelfth day of September, Nineteen Hundred and Twelve, the

date of his last report, his account as Treasurer in the Orange National Bank was overdrawn to the amount of Five Hundred and Seventy-three Dollars and Ninety-one Cents ($573.91), since which time he has received from various sources, as shown in itemized statement hereunto annexed, the sum of Three Thousand and Fifty Dollars ($3,050). He has paid out in vouchers since the date of his said last report, as shown on itemized statement hereunto annexed, the sum of One Thousand Five Hundred and Twenty-two Dollars and Sixty-three Cents ($1,522.63), which includes the said overdraft, and he now has on deposit in said Orange National Bank the sum of One Thousand Five Hundred and Twenty-seven Dollars and Thirty-seven Cents ($1,527.37).

"All of which is respectfully submitted this Seventh day of November, Nineteen Hundred and Twelve.

"SIMEON H. ROLLINSON,
"Treasurer."

Itemized Statement.

1912.			
Sept. 12	Overdrawn at Bank		$ 573.91
Sept. 24	Irvington	$ 435.71	
Sept. 24	Summit	435.72	
Sept. 24	South Orange	435.71	
Sept. 16	Millburn	435.72	
Sept. 16	West Orange	435.72	
Sept. 25	Newark	871.42	
	Total Receipts	$3,050.00	
	Overdraft as above	573.91	
	Cash on hand		$2,476.09

Disbursements.

1912.			
Sept. 17	N. Y. Telephone Co.	$ 9.85	
Sept. 17	Summit Herald	18.00	
Sept. 17	S. H. Rollinson	62.50	
Sept. 17	Arthur Tepper	105.50	
Sept. 30	F. Ross Sandford	170.00	
Sept. 30	Alexander Potter	83.34	
Sept. 30	Corey W. Sandford	100.00	
Oct. 11	Arthur Tepper	46.20	
Oct. 31	Alexander Potter	83.33	
Oct. 31	F. Ross Sandford	170.00	
Oct. 31	Corey W. Sandford	100.00	
	Total Disbursements		948.72
	Balance in Bank		$1,527.37

A request was received over the telephone from the Irvington Health Board asking that notice of next meeting be sent them in order that they may bring up the matter of conditions in Augusta Street.

The Secretary was directed to notify the Secretary of the Board of Health of the date of next meeting.

Chief Inspector F. Ross Sandford was authorized to spend not to exceed ten dollars for a stop-watch for use in his department.

The following bills were read, approved and ordered paid, a vote by roll call resulting: 5 ayes, no noes:

Arthur Tepper, petty cash	$ 46.20
Alexander Potter, Oct. salary	83.33
F. R. Sandford, Oct. salary, etc.	170.00
C. W. Sandford, Oct. salary	100.00
E. C. Cattley, services in investigating roof leaders	61.20
Sessions Foundry Co.	98.04
American Surety Co., Treasurer's bond	20.00
Summit Herald, printing minutes	12.00
N. Y. Telephone Co.	2.70
Adrian Riker, retainer for year	250.00
Arthur Tepper, petty cash	6.96
Alexander Potter, Nov. salary	83.33
F. R. Sandford, Nov. salary, etc.	170.00
C. W. Sandford, Nov. salary	100.00

On motion the meeting adjourned.

ARTHUR TEPPER,
Secretary.

Joint Meeting of December 26, 1912.

A meeting of the Joint Meeting was held in South Orange Village Hall, on Thursday, December 26, 1912.

Present: Mr. Francis Speir, Chairman; Messrs. Denman, of Newark; Greene, of Irvington; Allen, of South Orange; Kenney, of West Orange, and Smithers, of Millburn.

The minutes of the last meeting were approved as printed.

The Engineer read the following report, which was received and ordered placed in the minutes:

"December 26, 1912.

"To the Joint Meeting:

"Gentlemen:—Your Engineer has nothing special to report since the meeting held November 7.

"The general sewer specification submitted by me at the last meeting was transmitted, as directed, to the various local Engineers, but up to this time I have received no suggestions or comments from them in reference to this form of specification.

"On December 23, I wrote to the Secretary at the suggestion of the Chairman, giving him the subdivision of the Roselle Park money between the constituent members of the Joint Meeting, a copy of which letter is as follows:

"'New York, December 23, 1912.

"'Mr. Arthur Tepper,

"'Secretary, Joint Meeting,

"'Millburn, New Jersey:

"'Dear Sir:—At the request of Mr. Speir, I send you the amounts which should be paid to each one of the joint municipalities out of the proceeds received from Roselle Park for the rights acquired by them in the Joint Trunk Sewer. These items are based upon the assumption that the total amount received from Roselle Park is $18,682.50, the amount stated by Mr. Speir:

Summit, 20.13%	$ 3,760.79
Newark, 20.30%	3,792.55
Irvington, 16.06%	3,000.41
West Orange, 16.80%	3,138.66
South Orange, 16.29%	3,043.38
Millburn, 10.42%	1,946.71
	$18,682.50

"'Yours very truly,

"'Alexander Potter.'

"I have received no word from Irvington in reference to the conditions in Augusta Street.

"Respectfully submitted,

"Alexander Potter."

The Treasurer read the following report, which was received and ordered placed in the minutes:

"To the Various Municipalities Comprising the Joint Sewer Meeting:

"Gentlemen:—The Treasurer respectfully reports that on the seventh day of November, Nineteen Hundred and Twelve, the date of his last report, he had on deposit in the Orange National Bank the sum of Fifteen Hundred and Twenty-seven Dollars and Thirty-seven Cents ($1,527.37), since which time he has deposited the sum of Eighteen Thousand Six Hundred and Eighty-two Dollars and Fifty Cents ($18,682.50), the amount received from Roselle Park, making the total amount of cash on hand the sum of Twenty Thousand Two Hundred and Nine Dollars and Eighty-seven Cents ($20209.87). Since the date of his last report warrants have been drawn, as shown on an itemized statement hereunto annexed, amounting to Twelve Hundred and Seventy-three Dollars and Six Cents ($1,273.06), one of which, however, drawn to E. C. Cattley for the sum of Sixty-one Dollars and Twenty Cents ($61.20), has not been presented for payment, so that the Treasurer now has on deposit in the Orange National Bank the sum of Eighteen Thousand Nine Hundred and Ninety-eight Dollars and One Cent ($18,998.01), with said warrant for Sixty-one Dollars and Twenty Cents ($61.20) outstanding.

"All of which is respectfully submitted this Twenty-sixth day of December, Nineteen Hundred and Twelve.

"Simeon H. Rollinson,
"Treasurer."

A motion was made and duly seconded that the action of the officers in stopping the payment of warrants No. 1926, drawn to Alexander Potter for $83.33 for November salary, No. 1927, drawn to F. R. Sandford for $170.00 for November salary, No. 1928, drawn to C. W. Sandford for $100.00 for November salary, which were lost, and the issuing of new warrants in place thereof, combining the November and December salaries, be hereby approved. So ordered.

A motion was made and seconded as follows:

As the warrant issued to E. C. Cattley, No. 1924 for $61.20, was also lost, the officers are hereby authorized to issue a stop notice for this warrant and to issue a new warrant in its place. So ordered.

The report of the Chief Inspector was read and ordered placed on file.

The following resolution was made and upon a vote being taken by roll call was carried. 5 ayes, no noes:

"Resolved, That the several municipalities do raise and pay to the Treasurer of the Joint Meeting the sum of $1,525, which shall be assessed upon the joint municipalities in the proportion fixed by the contract between the several municipalities as provided for the care and maintenance of the Joint Sewer, i. e., each municipality paying an equal amount or one-seventh of such assessment (excepting the City of Newark, which shall pay two-sevenths, or one-seventh for Newark and one-seventh for Vailsburg), and, further, that the Secretary be directed to notify the various municipalities of such assessment and the proportion to be paid by each, and be it further

"Resolved, That the said moneys be paid to the Treasurer of the Joint Meeting within twenty days of the 26th day of December, 1912."

This is the assessment for the 4th quarter of 1912.

Messrs. Winkler and Clickenger, of the Irvington Board of Health, were present and addressed the meeting on the subject of odors from sewers in Augusta Street.

No official action was taken.

Upon motion the officers were directed to issue warrants to the several municipalities for their share of the moneys received from Roselle Park for the amounts as stated in the Engineer's report. This was accordingly done and the warrants handed to the representatives of the several municipalities to be given to their governing bodies.

The following bills were read, approved and ordered paid, a vote by roll call resulting 5 ayes, no noes:

Arthur Tepper, petty cash	$ 10.00
Arthur Tepper, salary and rent	105.50
Alexander Potter, Nov. and Dec. salary	166.66
F. Ross Sandford, Nov. and Dec. salary	340.00
Corey W. Sandford, Nov. and Dec. salary	200.00
F. Ross Sandford, sundry account	8.89
Summit Herald, printing minutes	6.00
N. Y. Telephone Co.	5.90
Adrian Riker	925.66
Adrian Riker	50.00
S. H. Rollinson, salary	62.50
Francis Speir	15.00
A. R. Denman	15.00
E. S. Allen	15.00
H. G. Clopper	10.00

John J. Kenney	15.00
David H. Greene	10.00
E. L. Smithers	10.00

On motion the meeting adjourned.

ARTHUR TEPPER,
Secretary.

Joint Meeting of February 6, 1913.

A meeting of the Joint Meeting was held on Thursday evening, February 6th, 1913, at South Orange Village Hall.

Present: Mr. Francis Speir, Chairman; Messrs. E. S. Allen, of South Orange; J. J. Kenney, of West Orange; E. L. Smithers, of Millburn; Frank R. Sharp, of Irvington, and General J. G. D. Knight, of Summit.

The minutes of the last meeting were approved as printed.

The Chairman stated that the object of the meeting was the appointment of a successor to the late Chief Inspector, Mr. F. Ross Sandford. Mr. Speir spoke in the highest terms of the late Mr. Sandford, following which the following resolution was offered by Mr. E. S. Allen and seconded by Mr. E. L. Smithers and unanimously adopted:

"F. ROSS SANDFORD during the construction of the Joint Trunk Sewer became an inspector thereof. His record as such was so admirable that on the completion of the work, when the Joint Meeting was reorganized as a Body to maintain the Joint Trunk Sewer, Mr. Sandford was unanimously elected Chief Inspector and served as such until his death at South Orange on January 21, 1913. During his whole term Mr. Sandford worked wholeheartedly and with success to keep in condition the Joint Trunk Sewer, which is so vitally important to the six municipalities owning it. Mr. Sandford was of marked probity, of kindly nature, possessing great intelligence and technical knowledge, and also having the gift of dealing with men, winning good will instead of ill will. His services were invaluable and his death is a personal loss to the members composing the Joint Body and to the residents of the municipalities included therein.

"Now be it Resolved, That the City of Newark, the City of Summit, the Town of Irvington, the Town of West Orange, the Village of South Orange, and the Township of Millburn, in Joint Meeting assembled, adopt the foregoing minute as a mark of respect, and direct that it be spread upon the minutes of the Joint Meeting, and a copy thereof be sent to Mrs. Sandford."

The Engineer read the following report, which was accepted and ordered placed in the minutes:

"February 6th, 1913.

"To the Joint Meeting:

"Gentlemen:—As Chief Engineer of the Joint Trunk Sewer, I have the sad duty to inform you officially of the death of the Chief Inspector, Mr. F. Ross Sandford, who has served the Joint Meeting faithfully since June 16, 1904.

"During this entire period, Mr. Sandford has been consistently faithful in the discharge of his duties, and has at all times, disregardful of his personal comforts, endeavored to discharge the duties of Chief Inspector in an efficient manner. Being of strong physique, he was able to undergo hardships to which many younger men might have succumbed. It is a pleasure to me to pay this tribute to a man who has endeavored, as far as in him lay, to render faithful service.

"In October, 1911, Mr. Sandford met with an accident in stepping from a street car, and since that time has labored under severe mental and physical strain. The accident on the street car was followed by a second accident in his home, and since that time Mr. Sandford endured great physical pain. Since the middle of November, he has been able to leave his home but once, and then only for a short time. Almost to the end, he assumed that it would be but a matter of a few days when he would be able to be out about his work. However, on January 21st, Mr. Sandford passed away at his home, 120 Roland Avenue, South Orange, N. J.

"Mr. Sandford's death leaves a vacancy in the position of Chief Inspector of the Joint Trunk Sewer. In this connection, I think it my duty to speak of the efficient service of the Assistant Inspector, Mr. Corey W. Sandford, who has acted as Assistant Inspector of the Joint Trunk Sewer almost as long as Mr. F. Ross Sandford was Inspector. While having the same surname, these two men are not related in any way.

"The work performed by Mr. Corey Sandford at times has been of such a character that few men can be found who would be willing to do the work. Obstructions occur in the sewer, and it is necessary at times for men to take the chance of being wholly or partially submerged by a sudden breaking through of obstructions in some of the deeper sewers. Mr. Corey W. Sandford, to my knowledge, has never shirked his work. I cannot say the same thing of all men who have been employed in a similar position. Mr. Sandford is thoroughly conversant with the sewer from Bayway to its upper extremities, and I believe his knowledge of conditions and his solidity and honesty qualify him for promotion. There are a number of men resident in the various

towns served by the Joint Trunk Sewer who would make admirable men for this position, but I believe that it is a good principle always to reward faithfulness of service.

"For the last year the condition of Mr. F. Ross Sandford has thrown upon his assistant the bulk of the work, and I believe that if Mr. Corey Sandford is appointed to the position of Chief Inspector he should be willing to accept a reasonable increase over his present salary, together with the cost of upkeep of a horse. I would suggest that if he is appointed, the sum of $150.00 be fixed as his salary, with the understanding that if he makes good, he can look forward to an increase in compensation in the course of a year or more.

"Mr. Speir has transmitted to me an order from the State Board of Health, ordering us to seal up the opening under the Lyons Avenue bridge within ten days from the 28th of January, 1913. I have been in conference with Mr. Rankin, Engineer of Sewers and Drainage of Newark, who informs me that the storm sewers in Newark are so nearly completed that no damage can be done by the sealing up of any connection that may have been made by Newark to the various branches of the joint sewer and which may at times contribute storm water to our sewer. I have therefore given instructions to the Acting Inspector to see that the overflow from the car barns in Newark, which has been connected with the Joint Trunk Sewer, is closed and also all other connections he may find which at times are liable to contribute storm water to our sewer. With these connections closed off, I believe no harm can come to the Joint Trunk Sewer by carrying out the order of the State Board of Health, and this will be done within the time limit set in their decree.

"As is known, the City of Newark is constructing a number of storm water sewers through Vailsburg and Irvington, and these sewers are in certain instances interfering with the Joint Trunk Sewer. So far, there has been a cordial co-operation between your Engineer and the engineers of the City of Newark, and the sections of the Joint Sewer which have in the past been obstructed or broken by the work done by Newark have been repaired or replaced by Newark. In my opinion, however, the City of Newark will have to replace about six hundred feet additional of the Joint Trunk Sewer which is out of line and grade, due, in my judgment, to the construction of the storm water drains at a lower level than the Joint Sewer. Your Engineer will have a conference with Newark's engineer upon the ground to-morrow morning to decide upon this question.

"The Acting Inspector has a bill of $46.00 for labor and material in connection with repairs upon the Joint Trunk Sewer paralleling the new construction work of Newark, in an endeavor to keep the Joint Sewer in operation. As the construction of this new work is entirely responsible for this expenditure, the ques-

tion is raised as to whether this amount should not be charged against the City of Newark, and by them, against the contractors who are building the storm drains in question.

"Respectfully submitted,

"ALEXANDER POTTER."

The Engineer recommended that a bill for $46.00 be rendered the City of Newark, with a recommendation that it be charged against the contractor.

A motion was made and seconded that the bill be rendered, and that the Engineer take up the matter with Newark. So ordered.

The present Mayor of Irvington, Hon. David H. Greene, at this point spoke on the subject of a successor to Mr. F. Ross Sandford, and spoke in the highest terms of the Assistant Inspector, Mr. Corey W. Sandford, and advised his promotion to the position.

The Treasurer presented the following report, which was received and ordered placed in the minutes:

"To the Various Municipalities Comprising the Joint Sewer Meeting:

"Gentlemen:—The Treasurer respectfully reports that on the Twenty-sixth day of December, Nineteen Hundred and Twelve, the date of his last report, he had on deposit in the Orange National Bank the sum of Eighteen Thousand Nine Hundred and Ninety-eight Dollars and One Cent ($18,998.01), with one warrant drawn to the order of E. C. Cattley for the sum of Sixty-one Dollars and Twenty Cents ($61.20) outstanding; this warrant was found to have been lost; since which time he has deposited in the said Orange National Bank the sum of Fifteen Hundred and Twenty-five Dollars ($1,525), representing the various amounts assessed upon the joint municipalities. He has been credited with Twenty-seven Dollars and Eighty Cents ($27.80) interest, so that the total amount of cash on hand, as shown in the itemized statement hereunto annexed, amounted to Twenty Thousand Five Hundred and Fifty Dollars and Eighty-one Cents ($20,550.81). Since the date of his last report warrants have been drawn, as shown on an itemized statement hereunto annexed, amounting to Twenty Thousand Three Hundred and Nineteen Dollars and Ninety-eight Cents ($20,319.98), so that the total amount of cash on hand is the sum of Two Hundred and Thirty Dollars and Eighty-three Cents ($230.83); two warrants, however, have not been presented for payment, to wit, Warrant 1936, drawn to the order of the Town of Irvington for Three Thousand Dollars and Forty-one Cents ($3,000.41), and Warrant 1956, to the

order of F. Ross Sandford for One Hundred and Seventy Dollars ($170), so that the Treasurer now has on deposit in the Orange National Bank the sum of Three Thousand Four Hundred and One Dollars and Twenty-four Cents ($3,401.24), with said two warrants above mentioned now outstanding.

"All of which is respectfully submitted this Sixth day of February, Nineteen Hundred and Thirteen.

"SIMEON H. ROLLINSON,
"Treasurer."

The following resolution was offered, a vote by roll call resulting, 5 ayes, no noes:

"Resolved, That the several municipalities do raise and pay to the Treasurer of the Joint Meeting the sum of $1,750.00, which shall be assessed upon the joint municipalities in the proportion fixed by the contract between the several municipalities as provided for the care and maintenance of the Joint Sewer, i. e., each municipality paying an equal amount or one-seventh of such assessment (excepting the City of Newark, which shall pay two-sevenths, or one-seventh for Newark and one-seventh for Vailsburg), and, further, that the Secretary be directed to notify the various municipalities of such assessment and the proportion to be paid by each; and be it further

"Resolved, That the said moneys be paid to the Treasurer of the Joint Meeting within twenty days of the 6th day of February, 1913."

This is the assessment for the first quarter of 1913.

Mr. Sharp, of Irvington, was appointed to serve on the Auditing Committee.

The following bills were read, approved and ordered paid, a vote by roll call resulting 5 ayes, no noes:

Arthur Tepper, petty cash	$ 54.00
Alexander Potter, January salary	83.33
F. Ross Sandford, January salary	170.00
C. W. Sandford, January salary	100.00
Arthur Tepper, petty cash	20.00
Summit Herald, printing minutes	6.00
New York Telephone Co.	9.05

The Board then took up the matter of electing a Chief Inspector.

Mr. Sharp nominated Mr. Corey W. Sandford. Mr. Smithers seconded the nomination and the Secretary was directed to cast a ballot for Corey W. Sandford. This having been done, Mr. Corey W. Sandford was declared elected Chief Inspector.

The question of salary came up, and it was decided that the terms should be the same as with Mr. F. Ross Sandford, i. e., $125.00 per month salary and $45.00 per month for horse hire, storage of equipment, etc.

Mr. Smithers then nominated Mr. John J. Keating for Assistant Inspector. The nomination was seconded, the Secretary instructed to cast a ballot for Mr. Keating, and he was declared duly elected as Assistant Inspector at a salary of $100.00 per month. Duties to begin at once.

Mr. Sharp made a motion that a party wire telephone be installed in Mr. Keating's house as soon as possible, and, further, that the action of the Chairman in ordering a telephone in Corey W. Sandford's house be ratified. So ordered.

Messrs. Sharp and Kraemer were appointed to serve on the committee which, with Counsel, was to take up the matter of additional legislation.

Mr. Sharp made a motion that Engineer and Counsel proceed at once to draft such bills as may seem necessary for the protection and additional safeguarding of our Sewer System. So ordered.

On motion the meeting adjourned.

ARTHUR TEPPER,
Secretary.

Joint Meeting of April 24, 1913.

Meeting of the Joint Meeting held in South Orange Village Hall, April 24th, 1913, at 8 p. m.

Present: Messrs. E. S. Allen, of South Orange; J. J. Kenney, of West Orange; Frank Sharp, of Irvington; Charles F. Kraemer, of Newark; E. L. Smithers, of Millburn, and Gen. J. G. D. Knight, of Summit.

In the absence of the chairman, Mr. E. S. Allen was unanimously chosen to act as chairman of the meeting, and called the meeting to order.

The minutes of the last meeting were approved as printed.

Mr. Alexander Potter, the Chief Engineer, was absent, but the following report was made by his assistant, Mr. A. H. Beyer:

"April 24, 1913.

"The Joint Meeting:

"Gentlemen:—I submit herewith a report upon matters of interest to the Joint Meeting.

"In the last report I advised the Joint Meeting of an order received from the State Board of Health ordering us to seal up the opening under the Lyons Avenue bridge within ten days from the 28th of January. This opening has been sealed upon or about the 8th of February.

"To prevent the manhole on the Joint Trunk Sewer directly south of the Lyons Avenue siphon in Irvington from overflowing, a tight cover has been placed on it. Since this work was done we have had a number of severe storms which have taxed the capacity of the sewer. In Irvington a cover was forced off the manhole on Lincoln Place above Lyons Avenue, due to the fact that the overflow was sealed. The pressure developed in the sewer also started it leaking in several places on the old Michael Dorer farm in Irvington. These leaks are of no consequence so far as the Joint Trunk Sewer is concerned, except that it shows that the sewer is discharging under considerable pressure.

"On Section 3, about half a mile above the junction of Sections 2 and 3, the Elizabeth River has been gradually changing its course and washing up against the sewer where it passes through the Day farm. As this matter needed immediate attention in order to prevent the Joint Sewer from being undermined, I ordered the inspector to build a retaining wall about thirty feet long to protect the sewer. Before this work could be started, a second flood occurred, which ex-

posed an additional length of the sewer, making it necessary to increase the length of the retaining wall from thirty feet to sixty feet. The wall is about four feet high, two feet thick at the base and eighteen inches thick at the top. The space between the wall and the sewer, a distance of twenty-four inches, is backfilled and well rammed with good material.

"To do this work, the river channel had to be diverted. This necessitated cutting a channel for the river one hundred and fifty feet long, three feet deep and four feet wide at the bottom, and building a small diversion dam about thirty-five feet long and four feet high. All of this work was done very economically, and the entire cost to the Joint Meeting is $66.00.

"On this same section there are three or four places in the same farm where small spring streams run over the sewer on their way to the Elizabeth River. At these points the sewer was protected by a layer of concrete. Exposure and disintegration has worn off this protecting concrete. The bricks are exposed. I have ordered that this protecting concrete be replaced, but in a more substantial manner. The cost of doing this work will be very nominal; it can be done during the summer months by the inspector and his assistants.

"During the recent heavy rains, Sections 4 and 5 have been taxed beyond their carrying capacity with storm water. In Section 4, for some reason which we have been unable to fathom thus far, the flooded condition of the sewer is maintained for a much longer period than our experience would lead us to expect. We have made a number of investigations to locate the source of this, but thus far have been unable to find the true explanation.

"On April 16th that portion of the 12-inch sewer rebuilt by Newark on Brookdale Avenue was destroyed directly above Ocean Avenue for a distance of about seventy-five feet by the bursting of a water main. Temporarily, the flow from the upper portion of this line was drained into the storm sewer. Newark has taken charge of the repair work.

"Following is a copy of a letter received from Mr. Rankin in reference to the bill for $46.00 rendered to the City of Newark as recommended at the last meeting:

"'Newark, N. J., April 9th, 1913.

"'Mr. Alex. Potter,

"'116 Liberty Street,

"'New York City:

"'Dear Sir:—Please pardon my delay in answering your letter regarding charges for repairs on the Joint Outlet Sewer on Valley Street. While I am not prepared to admit that the breakage was caused by the construction of the new sewer, inas-

much as this city would have to pay the greatest part of your bill in any event, I have decided to charge up this cost against the contract and will notify the contractor to settle with the Joint Meeting, reimbursing him in his final estimate. As he is under very heavy expense it is probable that the bill will not be paid until he receives his final estimate, which would be about June first.

"'Very truly yours,

"'EDWARD S. RANKIN,

"'Engineer, Sewers and Drainage.'

"Inspector Sandford has been notified by the City Engineer of Elizabeth that the trolley company intends shortly to build two trolley tracks on South Broad Street and Bayway, and thence south along Bayway. At the point where these trolley tracks cross the Joint Trunk Sewer, the sewer is only thirty inches below the surface. If ordinary construction is used for the trolley track foundation at the point where it crosses the sewer, the additional load brought upon the sewer may seriously injure it. The cost of strengthening the sewer or modifying the construction of the foundation for the tracks for a distance not to exceed one hundred and fifty feet, should be nominal. I have asked Mr. Riker to give an opinion in this matter as to whether or not it is up to the Joint Meeting to reinforce the sewer so that the trolley company can use their standard construction at this point.

"I have received an application from the City of Elizabeth to connect two catch basins to the Joint Sewer. I submit herewith copies of correspondence in this matter.

"I submit herewith two bills: one for a thousand Dibble recording charts purchased from the Queen-Gray Co., amounting to $25.00, and one for making plate and printing a thousand charts for Richard gauges, amounting to $11.00.

"Respectfully submitted,

"ALEXANDER POTTER,

"Per A. H. B."

"Office of

"Thomas E. Collins, City Engineer,

"Elizabeth, N. J., February 19th, 1913.

"Dear Sir:—We are now building a sewer on Bayway parallel, and on the easterly side of the Joint Municipal Sewer. At the intersection of Jersey Avenue and Bayway we intend to place four catch basins. You can see from this plan that it will be necessary for us to go under your sewer. The clear between the bottom of your sewer and our proposed pipe to catch basin is approximately two feet.

"We have found at that point quicksand, and you can see it would be a rather dangerous undertaking to go under your sewer.

"It is absolutely necessary that we have these catch basins on the easterly side of your sewer, and thought possibly you might under these conditions allow us to connect our two catch basins on the easterly side with your sewer.

"Yours very truly,

"THOMAS E. COLLINS,
"City Engineer.

"Mr. Alexander Potter,
"50 Church St., New York City."

"New York, March 12, 1913.

"Mr. Thomas E. Collins, City Engineer,
"Elizabeth, N. J.:

"Dear Sir:—I regret that my absence from the city has prevented an earlier answer to your letter of February 19th.

"As the Joint Trunk Sewer is a strictly sanitary sewer, I do not see how I can favorably consider your request much as I should like to save you the trouble which undoubtedly you are up against. I will be glad to transmit your letter to the Joint Meeting the next time it convenes, lay the facts before them and tell them of your difficulties, and if they will give me permission to grant your request, I shall be pleased to do so.

"Very truly yours,

"ALEXANDER POTTER."

The report was accepted and ordered placed on file.

The following letters from Mr. Adrian Riker were then read:

"April 23, 1913.

"Mr. Arthur Tepper, Secretary,
"Summit, N. J.:

"Dear Sir:—Mr. Alexander Potter's office has submitted to me a letter from Corey W. Sandford respecting the condition of the sewer in the City of Elizabeth, and the proposed construction of trolley tracks in Bayway, being a street in which the sewer is also located. He has requested me to furnish an opinion as to whether or not it is necessary for the Joint Meeting to reinforce the sewer against the additional weight of the trolley construction or whether the trolley company can be required to use a special form of construction so as to make it unnecessary to reinforce the sewer.

"As at present advised I understand that the crown of the sewer in Bayway is within thirty inches of the surface of the street and that the sewer is of standard construction, but not particularly adapted to withstand extraordinary strain. I am of opinion that in the construction of such a sewer it should

have been so built as to meet such strains as might be incident to the normal use of the street surfaces for a public way, taking into consideration the depth at which the sewer was constructed. I am unable, however, to say positively that the imposing upon the surface of the street of the additional weight and strain of a trolley construction is not such a use of the street surface as should reasonably have been contemplated when the sewer was constructed. I am accordingly not willing to advise that the trolley company can be compelled to adopt a special construction in the laying of its tracks in Bayway so as to relieve the sewer from the pressure of the weight of its ordinary construction. I suggest that the Engineer's office be requested to confer with the trolley company, looking to some adjustment and arrangement which will be mutually satisfactory, and that a committee of the Joint Meeting be empowered to authorize the adoption of such plan as may be agreed upon and its performance on the part of the Joint Meeting. I make this last suggestion in order to obviate the necessity of holding a special meeting of the Joint Meeting.

"Very truly yours,

"ADRIAN RIKER."

"April 21, 1913.

"Mr. Arthur Tepper, Secretary,
"Summit, N. J.:

"Dear Sir:—I have a notice from you of a meeting of the Joint Meeting to be held April 24th. I know of no matter which requires my presence at this meeting, and would be glad to be relieved unless there is some such matter which I have not had brought to my attention.

"I think it should be reported, however, to the Joint Meeting that the Supreme Court has reduced the verdict in the Drake case to six cents damages, leaving the plaintiff, if he prefers, to retry the case. This seems to be a substantial victory, so far as the Joint Meeting is concerned.

"Very truly yours,

"ADRIAN RIKER."

Upon motion the recommendations were approved, and Messrs. Kraemer and Sharp were appointed as a committee to attend to the matter of trolley crossing.

The Treasurer's report was then read, approved and ordered placed on file:

"To the Various Municipalities Comprising The Joint Sewer Meeting:

"Gentlemen:—The Treasurer respectfully reports that on the sixth day of February, nineteen hundred and thirteen, the date of his last report, he had on deposit in the Orange Na-

tional Bank, the sum of Three Thousand Four Hundred and One Dollars and Twenty-four Cents ($3,401.24), with two warrants, one for Three Thousand Dollars and Forty-one Cents ($3,000.41) and the other for One Hundred and Seventy Dollars ($170) outstanding, which said warrants have since been cashed, so that the real amount of cash on hand amounted to Two Hundred and Thirty Dollars and Eighty-three Cents ($230.83). Since that time he has received from various sources, as shown on the itemized statement hereunto annexed, the sum of One Thousand Seven Hundred and Sixty Dollars ($1,760), which together with the balance above referred to and interest amounting to Eighteen Dollars and Sixty-nine Cents ($18.69) makes the total amount of cash on hand Two Thousand and Nine Dollars and Fifty-two Cents ($2,009.52).

"The Treasurer further reports that he has paid out in various warrants, as shown on the itemized statement hereunto annexed, the sum of Nine Hundred and Eighty-nine Dollars and Seventy-one Cents ($989.71), so that he now has on deposit in the Orange National Bank the sum of One Thousand and Nineteen Dollars and Eighty-one Cents ($1,019.81) with no warrants outstanding.

"All of which is respectfully submitted this Twenty-fourth day of April, Nineteen Hundred and Thirteen.

"Simeon H. Rollinson,
"Treasurer."

Mr. Allen then announced that the object of the meeting, as stated in notices sent out, was the election of a vice-chairman, who should act in the absence of the chairman, in signing warrants, calling meetings, etc.

Mr. E. L. Smithers was nominated and unanimously elected to this office.

The Secretary was directed to notify the Orange National Bank of Mr. Smithers' election.

A motion was made that the action of the Engineer in ordering work as reported be approved by the Joint Meeting. So ordered.

A motion was made by Gen. Knight that the Engineer's office furnish at the next meeting records of flow in the various sections of the Joint Trunk Sewer from 1909 (the date as shown in the pamphlets recently published) up to the present time, in order that the same may be printed in the minutes. So ordered.

The following bills were read, approved and ordered paid. Vote by roll call resulting—6 ayes, no noes:

Alexander Potter, February salary	$ 83.33
C. W. Sandford, February salary	170.00
J. J. Keating, February salary	75.00
Fred Allen, February salary	40.00
Alexander Potter, March salary	83.33
C. W. Sandford, March salary	170.00
J. J. Keating, March salary	100.00
Arthur Tepper, petty cash	85.00
J. A. Williams & Son, charts	11.00
Queen & Co., charts	25.00
Adrian Riker	50.00
New York Telephone Co.	13.03
New York Telephone Co.	3.44
Summit Herald	9.00

On motion the meeting adjourned.

ARTHUR TEPPER,
Secretary.

Joint Meeting of June 19, 1913.

The annual meeting of the Joint Meeting was held in South Orange Village Hall, on Tuesday evening, June 19th, 1913.

Present: Chairman Francis Speir, Messrs. Sharp, of Irvington; Kenney, of West Orange; Allen, of South Orange; Knight, of Summit, and Smithers, of Millburn.

Representative Kraemer, of Newark, was unable to attend, and Chief Engineer E. S. Rankin was present in his stead.

The meeting was called to order by the Chairman, and upon motion duly seconded, the minutes of the previous meeting were approved as printed.

The Engineer read the following report, which was accepted and ordered placed on file:

"June 19, 1913.

"To the Joint Meeting:

"Gentlemen:—The writer submitted an interim report detailing the extent of the sewage flow from each of the municipalities for the last five years. As he was of the opinion that the information contained in the report was of sufficient importance to the

various municipalities to warrant its issuance without waiting for the convening of the Joint Meeting, he asked the Secretary to have the report printed and distribute copies of it to the representatives of the municipalities.

"At the last meeting the matter of the construction of trolley tracks on Bayway over the Joint Trunk Sewer was brought up for consideration. I beg to report that under the direction of the office of your Engineer the Public Service Corporation has supported its tracks on concrete retaining walls over the sewer so as to eliminate the danger of rupturing the sewer by reason of the placing of the tracks over it.

"The rapid growth of Irvington and the Vailsburg section is concentrating the surface water upon the streets to such an extent that the construction of storm water sewers has become an absolute necessity. Already Newark is constructing a large storm water sewer through Irvington to drain the Vailsburg section, half of which is about completed and in operation; the other half will be completed within three or four months. The Town of Irvington has constructed one storm sewer already and has under advisement the construction of many additional storm sewers. These storm water sewers must inevitably result in reducing the peak load over our sanitary sewers, and the condition of surcharge which has existed in some of these sewers during heavy rains will gradually be lessened.

"When the plans of the Joint Trunk Sewer were first made, the writer recommended the construction of storage tanks on certain parts of the sewer. Since this design was made great progress has been made in sewage purification, and settling tanks can now be substituted for the storage tanks. The Joint Trunk Sewer has been so designed that at certain strategic points settling tanks can be constructed, the effluent from which tanks would pass, as at present, through the Trunk Sewer to the Sound. During times of severe storms the excess flow, after passing through the settling tanks, could without objection be discharged into streams not ordinarily used as a water supply without any danger to adjoining property owners.

"Until quite recently the streams flowing through the Irvington and Newark districts have been used without filteration by the City of Elizabeth. The State Board of Health has lately interfered in this matter, and no longer does Elizabeth secure its water supply from these sources.

"This relief method is suggested at this time because the record of flow recently prepared would indicate that for certain periods of the year the capacity of the sewer is now taxed to its utmost. The writer has not consulted the State Board

of Health in reference to this matter, but he is of the opinion that this plan would be acceptable to them.

"The sewer as constructed is large enough to take the sewage flow from the district for at least twenty years without surcharge. It is only the abnormal flows that need our attention. With the construction of storm sewers and the rather inexpensive settling tanks suggested herein, there need be no fear as to the adequacy of the Joint Trunk Sewer to properly convey away the household wastes from the territory it serves for at least twenty years in the future.

"Respectfully submitted,

"Alexander Potter."

The following report of the Treasurer was read, accepted and ordered placed on file:

"To the Various Municipalities Comprising the Joint Sewer Meeting:

"Gentlemen:—

"The Treasurer respectfully reports that on the 24th day of April, 1913, he had on deposit in the Orange National Bank the sum of $1,019.81, with no warrants outstanding. Since this time no money has been received by him for deposit.

"He has paid out in various warrants, as shown in the itemized statement hereunto annexed, the sum of $908.79, so that he now has on deposit in the Orange National Bank the sum of $111.02, with no warrants outstanding.

"All of which is respectfully submitted this 19th day of June, 1913.

"Simeon H. Rollinson,
"Treasurer."

A motion was made and duly seconded that the Engineer continue his study of the question of settling basins, etc., as applicable to the Joint Trunk Sewer System, and report to this Body from time to time. So ordered.

The following resolution was then offered, and upon being put to vote by roll-call was adopted: Five ayes, no noes.

"Resolved, That the several municipalities do raise and pay to the Treasurer of the Joint Meeting the sum of $1,750.00, which shall be assessed upon the Joint Municipalities in the proportion fixed by the contract between the several municipalities as provided for the care and maintenance of the Joint Sewer, i. e., each municipality paying an equal amount or one-seventh of such assessment (excepting the City of Newark, which shall pay two-sevenths, or one-seventh for Newark and one-seventh for Vailsburg), and further, that the Secretary be directed to notify the various municipalities of such assessment and the proportion to be paid by each; and be it further

"Resolved, That the said moneys be paid to the Treasurer of the Joint Meeting within twenty days of the 19th day of June, 1913."

This is the assessment for the second quarter of 1913.

A motion was made that the request of the City Engineer of Elizabeth, that two catch basins at the intersection of Jersey Avenue and Bayway, be connected with the Joint Sewer be denied. Seconded and so ordered.

The Engineer having recommended the establishment of a meter station to measure the flow contributed by South Orange Township, a motion was made that the recommendation be adopted. Seconded and so ordered.

Regarding the trees planted along the sewer right of way, Mr. Allen reported that the owner had agreed to transplant them at an early date.

The following bills were read, approved and ordered paid. A vote by roll-call resulting—five ayes; no noes:

Corey W. Sandford, expense account	$ 18.64
John J. Keating	1.70
S. H. Rollinson, January, February and March	62.50
Arthur Tepper, January, February and March	105.50
Alexander Potter, April salary	83.33
Corey W. Sandford, April salary and horse	170.00
J. J. Keating, April salary	100.00
Arthur Tepper, April salary and office	35.16
Alexander Potter, May salary	83.33
Corey W. Sandford, May salary and horse	170.00
J. J. Keating, May salary	100.00
Arthur Tepper, May salary and office	35.16
Summit Herald	28.00
N. Y. Telephone Co.	13.90
S. H. Rollinson, April, May and June	62.50
Francis Speir	10.00
E. L. Smithers	15.00
John J. Kenney	15.00
Frank R. Sharp	15.00
J. G. D. Knight	15.00
E. S. Allen	15.00
Chas. F. Kraemer	5.00
Gilbert Smith	20.00
Alexander Potter, June salary	83.35
Corey W. Sandford, June salary and horse	170.00
J. J. Keating, June salary	100.00
Arthur Tepper, June salary and office	35.16

The Board then went into the election of officers for the ensuing year, and the following gentlemen were unanimously elected:

Chairman—Francis Speir.
Vice-Chairman—E. L. Smithers.
Secretary—Arthur Tepper.
Treasurer—Simeon H. Rollinson.
Counsel—Adrian Riker.
Chief Engineer—Alexander Potter.
Chief Inspector—Corey W. Sandford.

A motion was made that the election of an Assistant Inspector be deferred until a subsequent meeting. Seconded and so ordered.

Upon motion the meeting adjourned.

Arthur Tepper,
Secretary.

Report of Alexander Potter, C. E., Chief Engineer on the Contributing Flow of the Various Municipalities in the Joint Sewer During the Years 1905-1912, *Inclusive.*

"May 19, 1913.

"To the Joint Meeting:

"Gentlemen:—I submit herewith a report upon the contributing flow of the various municipalities in the Joint Trunk Sewer during the years 1905-1912, inclusive.

"In Table One attached to this report I have tabulated the average daily contributing flow of the various municipalities to the Joint Trunk Sewer during these years. This table does not include the contributing flow from Roselle Park and Elizabeth. The last gauge on the sewer is placed at the upper end of the Elizabeth line. The Roselle Park branch enters the Joint Trunk Sewer within the City of Elizabeth; Elizabeth's contribution to the Joint Trunk Sewer is made throughout the entire length of three miles through Elizabeth, and is therefore not capable of direct measurement.

"Millburn's flow cannot be measured accurately, as from one-quarter to one-third of the total flow at present enters the Joint Trunk Sewer through unmetered mains. The flow from Summit and Millburn, respectively, in the sewer recently constructed on Morris Turnpike cannot readily be metered; it can only be estimated. The exact amount reaching the sewer from

each of these municipalities, therefore, can only be determined approximately.

"The contributing flow from South Orange Township to the Joint Sewer is not yet metered. I have estimated this flow as nearly as is possible with the data available, and have apportioned it between the municipalities of Millburn and South Orange Village. The flow from South Orange Township is now sufficient to justify the establishment of meter stations, and I would recommend that such stations be established.

"The percentages given in Table One as the percentage of capacity utilized are true only under average conditions for the entire year 1912. The flow contributed to the Joint Trunk Sewer by the various municipalities is by no means at a uniform rate. It varies widely with the time of the day, the season, and the weather conditions. In several of the municipalities, for short periods during times of prolonged storms, the flow may be as much as four or five times the average daily flow.

"In Table Two I have tabulated the maximum weekly flow, expressed in thousand gallons per day, to the Joint Trunk Sewer from the six contributing municipalities. The flows given in this table are average flows for that week of the year during which the municipality discharged the greatest quantity of sewage.

"To bring out more clearly the relation between average and maximum flows than is brought out in Tables One and Two, I have prepared a third table which gives the percentage ratio of the average yearly, maximum weekly, maximum daily and maximum hourly flow to the joint sewer from each of the six municipalities for the year 1910 to 1912, inclusive. This table shows that the municipalities at times discharge into the Joint Trunk Sewer at the rate of two to five times the average flow throughout the year. In short periods ranging from one to several hours at a time, practically all of the municipalities have exceeded their capacity.

"A diagram also is submitted to show more clearly than can be brought out by tables the relation between the allotted capacity and the contributing flow of each municipality. In this diagram the shaded area gives the reserve capacity that each municipality possesses under average conditions. Irvington and West Orange possess the smallest reserve capacity, and Summit and Millburn the largest. For weeks at a time the average flow both from Irvington and West Orange has exceeded the allotted capacity.

"The weekly excess flow is shown by the crosshatched areas in the diagram. The points marked by circles in this

diagram for the years 1910, 1911 and 1912 give the maximum rates of contributing flow reached during those years and maintained for a period of one hour or more. These maximum flows must be considered to be approximate only, as at such times many of the gauges cease to operate.

"The diagram convincingly shows that the exchange made between West Orange and the City of Orange in 1910, whereby each abandoned its pumping station in adverse drainage areas to sewer by gravity into the other outlet sewers, has not been favorable to West Orange, for since that time the flow in West Orange's sewers has been very much greater than before, as shown by the diagram. The excess flow in Irvington is caused in part by the storm water coming from Newark, which will soon cease when the large storm water sewers are placed in commission.

"Respectfully submitted,

"ALEXANDER POTTER."

TABLE ONE.

AVERAGE DAILY CONTRIBUTING FLOW TO THE JOINT TRUNK SEWER BY THE VARIOUS MUNICIPALITIES.

(Expressed in Thousand Gallons.)

Year.	Newark.	Irvington.	South Orange.*	West Orange.	Summit.	Millburn.*	Total.
1905	1,460	1,660	940	645	930	533	6,168
1906	1,825	1,765	970	805	826	472	6,663
1907	2,580	1,450	995	1,445	945	540	7,955
1908	2,515	2,205	1,270	1,520	1,139	653	9,302
1909	2,225	2,265	900	1,510	1,034	592	8,526
1910	2,070	2,790	730	1,930	924	528	8,972
1911	2,376	2,544	990	2,260	966	552	9,688
1912	2,420	2,900	1,150	2,250	994	568	10,282
Allotted capacity—							
	4,263	3,372.6	3,420.9	3,528	4,227.3	2,188.2	21,000
Per cent. of capacity utilized in 1912—							
	56.8	86.0	33.6	63.8	23.5	26.0	49.0

*Includes contributing flow from So. Orange Township.

TABLE TWO.

MAXIMUM WEEKLY FLOW, IN THOUSAND GALLONS PER DAY, CONTRIBUTED TO THE JOINT TRUNK SEWER BY THE VARIOUS MUNICIPALITIES.

Year.	Newark.	Irvington.	South Orange.*	West Orange.	Summit.	Millburn.*	Total.
1905	2,265	3,385	1,360	1,220	1,392	692	9,025
1906	3,950	2,040	2,310	1,725	1,744	867	12,875
1907	4,025	3,115	2,180	2,435	1,573	781	13,350
1908	4,560	2,660	3,730	3,190	2,090	1,038	13,350
1909	3,620	3,062	2,685	2,685	1,991	990	15,575
1910	3,335	4,125	2,300	3,840	1,864	926	12,000
1911	3,370	4,610	2,000	4,660	1,991	990	14,600
1912	4,060	4,260	2,000	5,210	2,590	1,287	16,825
Allotted capacity—							
	4,263	3,372.6	3,420.9	3,528	4,227.3	2,188.2	21,000
Per cent. of capacity utilized in 1912—							
	95.0	126.1	58.4	147.6	61.3	58.9	80.2

*Includes contributing flow from So. Orange Township.

TABLE THREE.

PERCENTAGE RATIO OF THE AVERAGE YEARLY, MAXIMUM WEEKLY, MAXIMUM DAILY AND MAXIMUM HOURLY FLOW TO THE JOINT TRUNK SEWER FOR THE VARIOUS MUNICIPALITIES.*

	Newark.	Irvington.	South Orange.	West Orange.	Summit.	Millburn.	Total.
1910.							
% Average Yearly ...	49	83	21	55	22	24	43
% Maximum Weekly ..	78	122	67	109	44	42	57
% Maximum Daily	102	150	71	121	84	80	66
% Maximum Hourly ..	146	154	74	127	93	88	100
1911.							
% Average Yearly ...	56	75	29	64	23	25	46
% Maximum Weekly ..	79	137	58	132	47	45	70
% Maximum Daily	99	141	61	133	91	88	74
% Maximum Hourly ..	110	161	81	153	106	100	100
1912.							
% Average Yearly ...	57	86	34	64	24	26	49
% Maximum Weekly ..	95	126	58	148	61	59	80
% Maximum Daily	108	151	71	151	99	95	85
% Maximum Hourly ..	127	157	80	153	118	112	100

*Percentages based on allotted capacity.

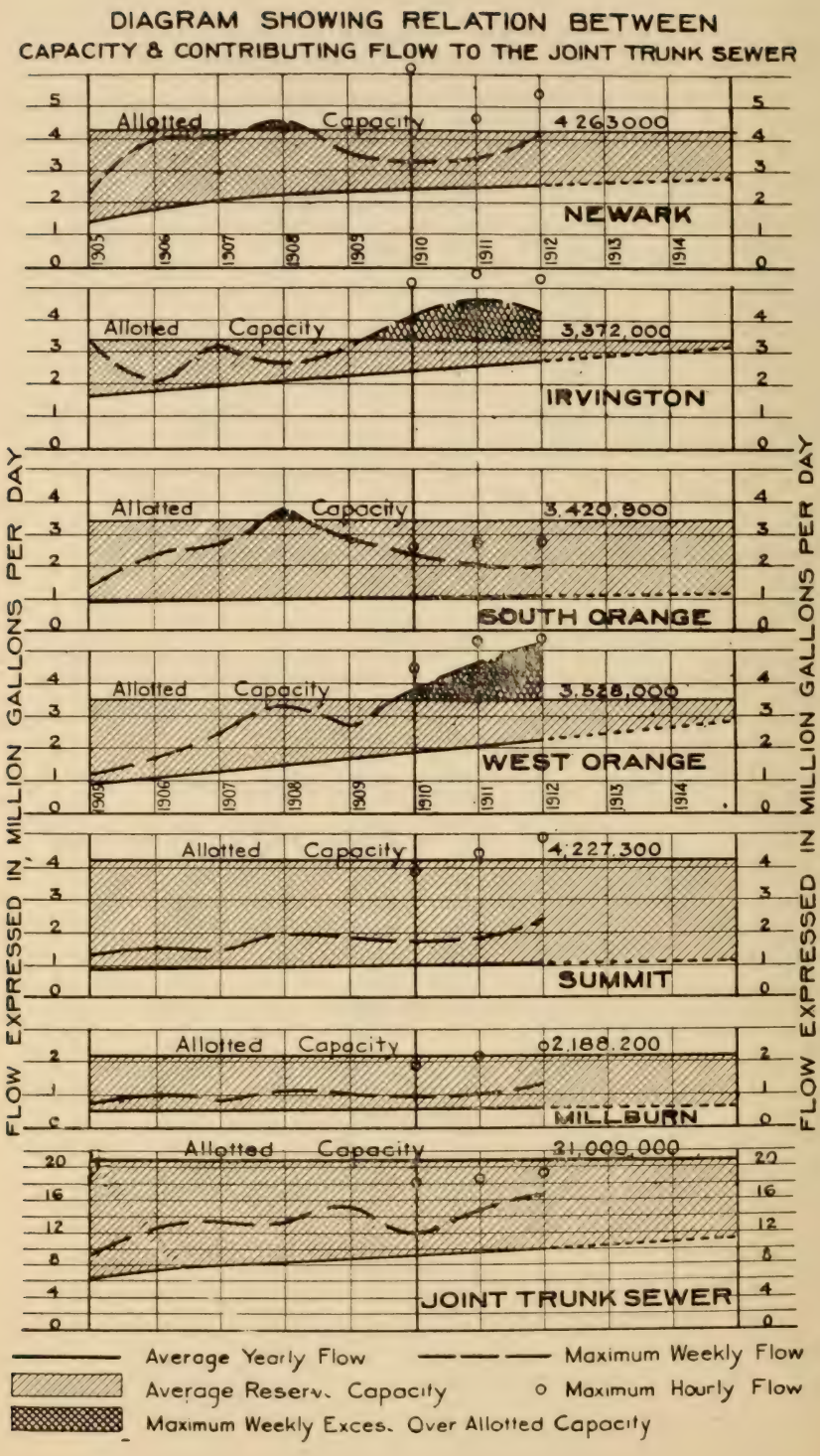


DIAGRAM SHOWING RELATION BETWEEN
CAPACITY & CONTRIBUTING FLOW TO THE JOINT TRUNK SEWER
FLOW EXPRESSED IN MILLION GALLONS PER DAY
FLOW EXPRESSED IN MILLION GALLONS PER DAY
Allotted Capacity 4,263,000
NEWARK
Allotted Capacity 3,372,000
IRVINGTON
Allotted Capacity 3,420,900
SOUTH ORANGE
Allotted Capacity 3,528,000
WEST ORANGE
Allotted Capacity 4,227,300
SUMMIT
Allotted Capacity 2,188,200
MILLBURN
Allotted Capacity 21,000,000
JOINT TRUNK SEWER
1905 1906 1907 1908 1909 1910 1911 1912 1913 1914
Average Yearly Flow
Maximum Weekly Flow
Average Reserv. Capacity
Maximum Hourly Flow
Maximum Weekly Exces. Over Allotted Capacity

Joint Meeting of September 18, 1913.

A meeting of the Joint Meeting was held on Thursday evening, September 18th, 1913, at South Orange Village Hall.

Present: Francis Speir, Chairman; Messrs. Denman, representing Newark; Sharp, of Irvington; Kenney, of West Orange, and Smithers, of Millburn.

The minutes of the last meeting were approved as printed.

The Engineer submitted the following report, which was accepted and ordered printed in the minutes:

"September 18, 1913.

"To the Joint Meeting:

"Gentlemen:—

"Augusta Street Sewer.

"Although the Board of Health of Irvington have been repeatedly advised that the unsanitary condition which has existed along Augusta Street for the last four or five years can be positively remedied by the cutting out of the house traps, the local Board of Health are positive in their determination not to change their code. They are of the opinion that the odors which undoubtedly occur on Augusta Street and on certain parts of Irvington's lateral sewers are due to lack of ventilation, and there is no doubt but that this is true.

"The sewer can be ventilated by the erection of standpipes along the street which will perform the same function as the vent pipes in the houses if the traps are removed. The Irvington Board of Health claim a right to insist upon the house trap because Newark's health code requires the house trap, notwithstanding the fact that Newark's engineers are opposed to this construction.

"In view of the determined stand taken by the health authorities at Irvington not to interfere with their plumbing code, and in view of the fact that undoubtedly there are odors on the street due to lack of ventilation in the sewer, it becomes a legal question as to whether or not any responsibility rests upon the Joint Meeting to abate these nuisances, when we consider that the health law of Irvington is not inconsistent with similar laws in some other cities. The Health Board at Irvington take the stand that the Joint Meeting must ventilate its own system and not ask private property owners to ventilate the sewers by means of their riser pipes. I cannot help but believe that the insistence in this matter is due largely to the fact that many of the property owners use the joint sewer as a means of draining their cellars, and the removal of the trap would tend to cause a direct passage of the gases into their cellars. The sewers were not constructed primarily for

cellar drainage. Cellar drainage is not a function of the sanitary sewer.

"I refer to this matter again because there is undoubtedly a very tense feeling in Irvington over this matter, and I cannot conceive that any Board of Health would be so blind to the best interest of the town to insist on the maintenance of a rule adopted by them simply because of consistency, if there were not some stronger reason back of it than has been expressed publicly to your Engineer by the Health Board.

"Interference of Newark's Storm Sewer with the Joint Sewer.

The City of Newark has recently completed the construction of a system of storm sewers through the Vailsburg district, which has effectively improved the surface water conditions throughout this portion of the city. Unfortunately, these storm sewers have followed along the streets occupied by joint sewers, and on account of the size of the storm sewers interference with the joint sewers has been inevitable. Furthermore, the size of the sewers and the topography of the ground are such that Newark was required to build these sewers at such a level that the bottom of them is in most cases lower than the bottom of the joint sewers. In ground such as that in which these sewers have been constructed, it is impossible to build a second sewer at a lower elevation than the existing sewer without disturbing the foundations of the first structure.

"Wherever a break has actually occurred, the City of Newark has assumed responsibility therefor and has made good the defect without cost to the Joint Meeting. I fear, however, that the settlement of the ground adjoining the new construction is not yet completed and that further breaks are liable to occur along the line of these sewers. Stoppages which may occur in these lines specially referred to herein, physically affect only the City of Newark.

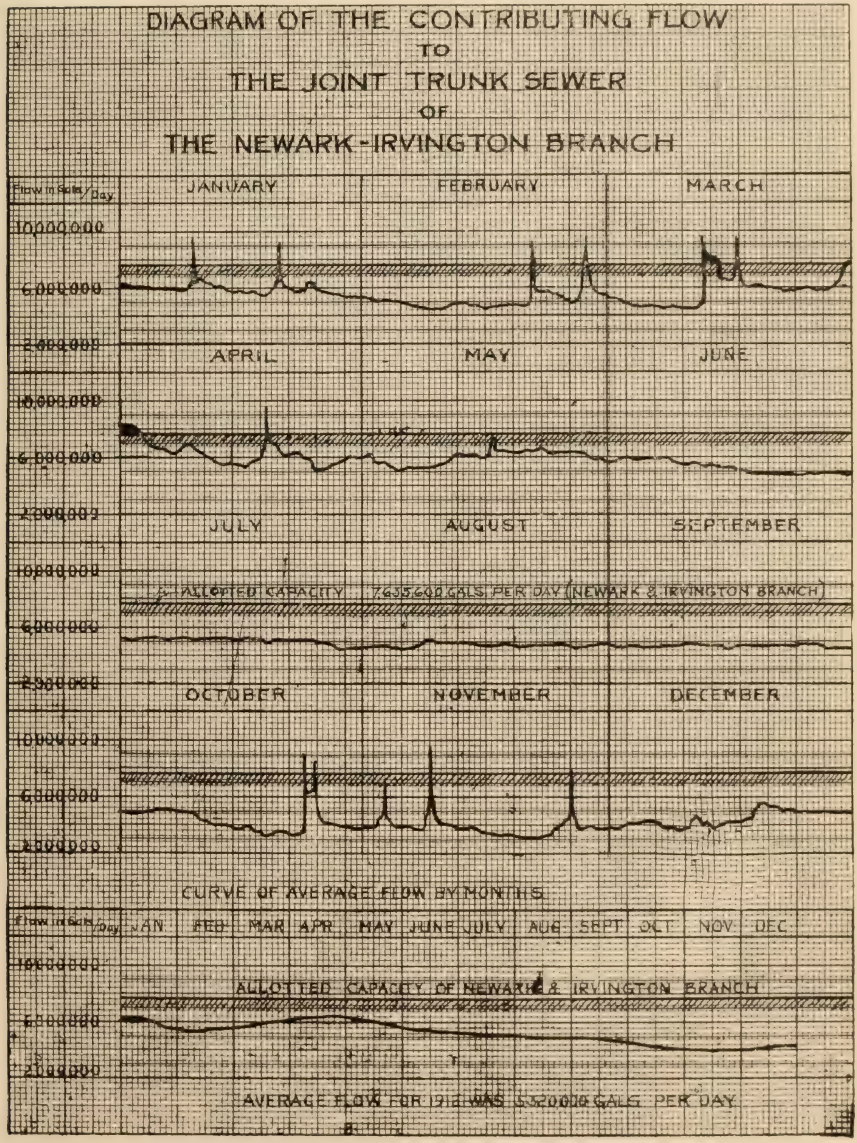
"Break on Grove Street.

The Town of Irvington recently constructed a storm sewer for the relief of a certain section of the Town near the Newark line, at Twentieth and Grove Streets. In crossing under our sewer at Grove Street, the grade of the top of their storm sewer impinged upon the bottom of our sanitary sewer. The result was that our sewer, rigidly supported on the crown of the storm sewer, was unsupported for several lengths on either side, and finally broke, causing stoppages in the Grove Street branch of the Joint Trunk Sewer. I have taken this matter up with the joint sewer representative of the Town of Irvington, and he stated that he would recommend that the Town assume responsibility for this condition, and as they have not yet settled with the contractor, the cost of repairs to our sewer will be borne by the Town and deducted from the amounts due the contractor.

"Settling Tanks.

"Your Engineer has had several conferences with the Engineer of the State Board of Health and is preparing data upon which his approval of these plans will be based.

"I submit herewith a diagram showing the number of times



the rated capacity of the Newark-Irvington branch has been exceeded during the year 1912.

"I do not believe it expedient to make any further statement with reference to the plans for the settling tanks at this time.

"Respectfully submitted,

"ALEXANDER POTTER."

The Treasurer submitted the following report, which was accepted and ordered printed in the minutes:

"To the Various Municipalities Comprising the Joint Sewer Meeting:

"Gentlemen:—The Treasurer respectfully reports, that on the nineteenth day of June, nineteen hundred and thirteen, the date of his last report, he had on deposit in the Orange National Bank the sum of one hundred and eleven dollars and two cents ($111.02), with no warrants outstanding, since which time he has received from various sources, as shown on the schedule annexed, the sum of seventeen hundred and ninety-seven dollars and ninety-eight cents ($1,797.98), making a total of cash on hand of nineteen hundred and nine dollars ($1,909).

"He has paid out in various warrants, as shown in the itemized statement hereunto annexed, the sum of fourteen hundred and eighty-nine dollars and eighty-nine cents ($1,489.89), so that he now has on deposit in the Orange National Bank the sum of four hundred and nineteen dollars and eleven cents ($419.11), with no warrants outstanding.

"All of which is respectfully submitted this eighteenth day of September, nineteen hundred and thirteen.

"SIMEON H. ROLLINSON,

"Treasurer."

Itemized Statement.

Receipts.

1913.			
June 19	Balance	$ 111.02	
June 30	Millburn	250.00	
July 2	Summit	250.00	
July 7	Irvington	250.00	
July 14	John W. Heller (Newark)	46.00	
July 3	West Orange	250.00	
July 21	South Orange	250.00	
July 12	Newark	500.00	
	Interest	1.98	
	Total	$1,909.00	$1,909.00

Disbursements.

1913.			
June 19	Summit Herald	$ 28.00	
June 19	N. Y. Telephone Co.	13.90	
June 19	S. H. Rollinson	62.50	
June 19	Francis Speir	10.00	
June 19	E. L. Smithers	15.00	
June 19	John J. Kenney	15.00	
June 19	Frank R. Sharp	15.00	
June 19	J. G. D. Knight	15.00	
June 19	E. S. Allen	15.00	
June 19	Charles F. Kraemer	5.00	
June 30	Gilbert Smith	20.00	
June 30	Alexander Potter	83.35	
June 30	Corey W. Sandford	170.00	
June 30	John J. Keating	100.00	
June 30	Arthur Tepper	35.16	
July 15	Arthur Tepper	10.00	
July 31	Alexander Potter	83.33	
July 31	Corey W. Sandford	170.00	
July 31	John J. Keating	100.00	
July 31	Arthur Tepper	35.16	
Aug. 30	Alexander Potter	83.33	
Aug. 30	Corey W. Sandford	170.00	
Aug. 30	John J. Keating	100.00	
Aug. 30	Arthur Tepper	35.16	
Aug. 30	Arthur Tepper	100.00	
		$1,489.89	$1,489.89
	Cash on hand		$ 419.11

The Secretary submitted the following report and balance sheet, which was accepted and ordered printed in the minutes:

"September 18th, 1913.

"To the Joint Meeting:

"Gentlemen:—Below please find Balance Sheet as per Secretary's books for the year ending April 1st, 1913:

Balance Sheet.

By Cash Account ...	$1,019.81	To Maintenance	
Petty Cash	100.00	Account	$1,210.59
Town of Irvington	300.00	Interest Account.	84.74
Suspense Account	16.92	J. P. Hall	100.00
		Earle & Dougherty	41.40
	$1,436.73		$1,436.73

"The total money spent for maintenance was $7,607.85, apportioned as follows:

Chief Engineer, regular salary	$1,000.00
Chief Engineer, extra expenses	259.20
Inspectors' salaries	3,063.00
Secretary's salary and office rent	496.50
(Includes last Quarter 1911-1912 Account.)	
Treasurer's salary	287.50
(Includes last Quarter 1911-1912 Account.)	
Executive Committee	185.00
Counsel, retainer and fees	1,225.00
Labor, repairs and sundries.....	1,091.65
	$7,607.85

"The extraordinary items of expense during the year were:

Counsel and Chemist in Drake suit	$1,075.66
Engineer's expenses investigating infiltration	259.20
	$1,334.86

"So that the present assessments for maintenance of $7,000.00 would seem to be ample for the coming year.

"Respectfully submitted,

"ARTHUR TEPPER,

"Secretary."

The following resolution was adopted, vote by roll call resulting 4 ayes, no noes:

"Resolved, That the several municipalities do raise and pay to the Treasurer of the Joint Meeting the sum of $1,750.00, which shall be assessed upon the joint municipalities in the proportion fixed by the contract between the several municipalities as provided for the care and maintenance of the Joint Sewer, i. e., each municipality paying an equal amount, or one-seventh of such assessment (excepting the City of Newark, which shall pay two-sevenths, or one-seventh for Newark and

one-seventh for Vailsburg), and further, that the Secretary be directed to notify the various municipalities of such assessment and the proportion to be paid by each; and be it further

"Resolved, That the said moneys be paid to the Treasurer of the Joint Meeting within twenty days of the 18th day of September, 1913.

"This is the assessment for the third quarter of 1913."

The Engineer reported verbally that recently the Town of Irvington has been putting in sewer connections every 25 feet along certain streets which were being permanently paved, and that our Inspector discovered that these connections were being carelessly made, and that the sewer was being broken in consequence. As soon as discovered, our Inspector was ordered to take charge, and the Engineer considers that the Town of Irvington should bear part, at least, of the expense. No action was taken.

Representative Sharp, of Irvington, took up the question of ventilating the sewer in certain streets of Irvington, and presented Irvington's side of the question.

On motion of Mr. Smithers it was moved and seconded that the Engineer be authorized to expend a sum not exceeding $250 to place an experimental system of ventilation for the Augusta Street sewer.

It being understood that in this action the Joint Board assumes no responsibility for the presence of the odors in that locality, as they have accepted the report of the Engineer of the Joint Trunk Sewer, the Sewerage Engineer of Newark and the Engineer of the Town of Irvington heretofore made to the Joint Board and now on file in its records reporting that with proper ventilation under a change of the Health Code of Irvington the cause of the complaint will be eliminated.

The following bills were audited, approved and ordered paid, vote by roll call resulting 4 ayes and no noes:

Alexander Potter, July salary	$ 83.33
C. W. Sandford, July salary and horse	170.00
J. J. Keating, July salary	100.00
Arthur Tepper, July salary and office	35.16
Alexander Potter, August salary	83.33
C. W. Sandford, August salary and horse ..	170.00
J. J. Keating, August salary	100.00
Arthur Tepper, August salary and office ..	35.16

Arthur Tepper, petty cash	100.00
Summit Herald	12.00
N. Y. Telephone Co.	19.25
J. A. Williams & Son	2.50
Adrian Riker	250.00
A. J. States	2.50
S. H. Rollinson, salary July-Sept.	62.50
Harry R. Ball	14.00
Stone Post Co.	19.00
C. W. Sandford, expense	11.89
J. J. Keating, expense	4.00

On motion the meeting adjourned.

ARTHUR TEPPER,
Secretary.

Joint Meeting of November 20, 1913.

A meeting of the Joint Meeting was held on Thursday evening, November 20th, 1913, in South Orange Village Hall.

Present: Francis Speir, Esq., Chairman; Messrs. Kraemer, of Newark; Sharp, of Irvington; Allen, of South Orange; Kenney, of West Orange; Smithers, of Millburn, and Knight, of Summit. Messrs. Denman and Rankin, of Newark, and Mr. Dobbins, Chairman of the Mosquito Extermination Committee, were also present.

The meeting was called to order by the Chairman at 8 o'clock.

The minutes of the last meeting were approved as printed.

The Engineer read the following report, which was accepted and ordered printed in the minutes:

"November 20, 1913.

"To the Joint Meeting:

"Gentlemen:—Your Engineer was requested by the Newark Board of Health and also by the Essex County Mosquito Extermination Commission to grant permission to reopen the connection with the pond near Fifteenth Avenue, Newark, for the purpose of draining it out preparatory to filling it in. Your Engineer agrees with the Chairman of the Joint Meeting that if the water in this pond is kept oiled there can be no objection to the water remaining there while the filling operations are in progress; in fact, with the water in the pond the filling will be more thoroughly compacted. In view of the possible flooding of the sewer and the uncertainty as to the length of time

it will take to fill up the pond, your Engineer did not consider that he was authorized to grant the request of the Extermination Commission. I have invited the chairman of the Commission to attend the meeting to-night to present the matter to the Joint Meeting in person.

"*Laurel Place Sewer.*—The joint sewer in Laurel Place in the old Borough of Vailsburg is broken in many places from Carolina to Vermont Avenues, and it is a fair inference that this sewer was broken by reason of the construction of the storm sewer built by the City of Newark in this street at a greater depth than the joint sewer. Heavy wooden sheet piling was driven within eighteen inches of the vitrified pipe, and as water was encountered in the ditch it would be physically impossible to construct a deeper sewer without affecting to some degree the foundation of the 15-inch vitrified pipe.

"West from Carolina Avenue to West End Avenue on Laurel Place our line is in good shape, which is cumulative evidence indicating the construction of the storm sewer as being directly responsible for the trouble. I am in conference with Mr. Rankin, Engineer of Sewers and Drains of Newark, as to the most rational way of repairing the sewer. This sewer serves only the City of Newark, and Mr. Rankin informs me that the City of Newark desires to raise a question as to whether or not sewers now controlled by the Joint Meeting which serve only the City of Newark cannot be treated by Newark as other sewers within the City of Newark. From an engineering standpoint your Engineer can offer no objection to Newark's contention in this regard.

"*Ventilating the Sewers in Irvington.*—Immediately after the last meeting your Engineer, acting under the authority of the resolution passed, prepared plans for carrying out the experiment with ventilation of the sewers in Irvington. Your Engineer was of the opinion that no information of value could be secured by simply erecting a few shafts on one street in Irvington without at the same time making an experiment as to results that could be obtained by the simple removal of the house traps on other sections. To this end he instructed your inspector to secure permission from property owners to remove their traps, the expense to be taken from the fund appropriated by the Joint Meeting, so that the information to be secured from this comparative test would be of value not only to Irvington but to sewer builders generally. Permission was received from a number of property owners but when this information reached the ears of the local Board of Health, they instructed property owners to refuse to permit any house traps to be removed until we concluded our investigation with the street ventilators, such as Irvington has been demanding. Your

Engineer believes that this order of the local Board of Health is an unwarranted interference with what he claims to be the wish of the Joint Meeting in appropriating the $250.00; namely, to get reliable information as to the best method of ventilating sewers as applied to the specific case before us—foul smelling sewers in Irvington.

"It might be of interest to the Joint Meeting to know that at the American Public Health Association Convention in Colorado Springs within the last month, the position taken all along by your Engineer and confirmed by the Special Commission of Engineers appointed by the Joint Meeting a number of years ago in connection with this matter was confirmed by the Association. A special committee on sewerage of the Public Health Association, composed of many eminent engineers of the country, reached the unanimous conclusion that ventilation of sewers is most easily and most satisfactorily secured through the house riser mains and the omission of the main house trap.

"In view of the attitude of the local health department, your Engineer has delayed in proceeding with the erection of the ventilators until he secured additional instructions from the Joint Meeting.

"That some sewers are receiving matter foreign to the purpose for which they were built is evidenced by the fact that it took our inspector's force two days to remove a stoppage of cotton waste on Augusta Street. The necessity of the various municipalities lending their highest effort to secure the construction of tight sewers is evidenced by the fact that it took the inspector's force two days to remove poplar roots on Lyons Avenue. The intrusion of poplar roots into sewers does not necessarily mean a carelessly constructed sewer. An opening in a joint the size of a lead pencil is liable to occur anywhere in the system unless the highest skill and the best materials are used in the making of the joints. Ordinary cement joints made in a wet trench are always liable to break before the joint has had an opportunity to harden.

"The joint sewer on Grove Street, damaged by the construction of the storm sewer built in Irvington, has been repaired since the last meeting at an expense of $108.65. I believe it is the concensus of opinion that this is a direct charge against the Town of Irvington, because the contractor in the construction of the storm sewer not only did not support the joint sewer but actually raised the joint sewer up an inch in order to pass under it with the least amount of trouble to himself.

On section three of the Joint Trunk Sewer a branch of the Elizabeth River has eroded the bank near the sewer so as to

cause a dangerous condition of the sewer. In order to stop further erosion, your Engineer prepared special plans for driving two parallel rows of sheeting between the sewer and the river, connecting the two rows of sheeting with tie rods and filling in the space between the rows. This work has been completed at an expense for labor of $87.00, and for material, $48.37. By the construction adopted there should be no further erosion of the sewer at this point.

"The Chief Inspector reports to me and the gauge records indicate a continued excess of flow from the Orange sewer. The contract between the City of Orange and the Town of West Orange expires in a year, and your Engineer believes it to be the province of the Joint Meeting to acquaint West Orange with the conditions existing since the transfer of capacity. West Orange can either return to its old method of pumping the sewage flow from the adverse drainage area, or make arrangements with Orange to take care of a larger percentage of West Orange's flow than it does at present, thus more nearly equalizing the quantity which Orange is contributing to the Joint Trunk Sewer.

"Your Engineer requested South Orange Township to construct the weir manholes for the measurement of the flow of sewage which is charged up against the Town of Millburn and the Village of South Orange. The Township is under contract to build these weir manholes, but your Engineer has not deemed it necessary before this to put them to the expense or the Joint Meeting to the trouble of maintaining these weirs, as the flow up to this time has been well within the amount owned by them. In response to your Engineer's request the Township has stated that they are not financially in a position to proceed with the construction of these weir manholes at the present time. Your Engineer would take it that this in itself is not sufficient justification for their refusal to construct the manholes. He is of the opinion, however, that no substantial injury is caused any of the constituent members of the Joint Trunk Sewer by reason of this refusal at the present time, provided we can receive assurance from them that the manholes will be constructed in the spring. This matter is before the Joint Meeting for their consideration.

"Your Engineer has incorporated in this report the salient items of the report of the Chief Inspector. Your Engineer has the report of the Inspector with him if the Joint Meeting desires to have it read.

"Respectfully yours,

"Alexander Potter,

"Chief Engineer."

The Treasurer read the following report, which was accepted and ordered printed in the minutes:

"To the Various Municipalities Comprising the Joint Sewer Meeting:

"Gentlemen:—The Treasurer respectfully reports that on the eighteenth day of September, nineteen hundred and thirteen, the date of his last report, he had on deposit in the Orange National Bank the sum of four hundred and nineteen dollars and eleven cents ($419.11), with no warrants outstanding, since which time he has deposited, as shown in Schedule 1, the sum of seventeen hundred and fifty dollars ($1,750), to which is added the item of two dollars and twenty-two cents ($2.22) interest, so that the total amount of cash on hand is twenty-one hundred and seventy-one dollars and thirty-three cents ($2,171.33). Since which time he has signed warrants, as shown on Schedule 2, amounting to thirteen hundred and seventy-four dollars and thirty-seven cents ($1,374.37), so that the total amount of cash on hand at this date is the sum of seven hundred and ninety-six dollars and ninety-six cents ($796.96). Warrant No. 2017, drawn to the order of A. J. States Co. for the sum of two dollars and fifty cents ($2.50), has not, however, been presented for payment, so that he now has on deposit in the Orange National Bank the sum of seven hundred and ninety-nine dollars and forty-six cents ($799.46), with said warrant for two dollars and fifty cents ($2.50) outstanding.

"All of which is respectfully submitted this twentieth day of November, nineteen hundred and thirteen.

"Simeon H. Rollinson,
"Treasurer."

Schedule 1.

1913.			
		$ 419.11	
Sept. 30	Millburn	250.00	
Oct. 6	Irvington	250.00	
Oct. 8	Summit	250.00	
Oct. 14	West Orange	250.00	
	South Orange	250.00	
	Newark	500.00	
	Interest	2.22	
			$2,171.33

Schedule 2.

1913.		
Sept. 18	Summit Herald	$ 12.00
Sept. 18	N. Y. Telephone Co.	19.25
Sept. 18	J. A. Williams & Son	2.50

Sept. 18	Adrian Riker	250.00	
Sept. 18	A. J. States Co.	2.50	
Sept. 18	S. H. Rollinson	62.50	
Sept. 18	Harry R. Ball	14.00	
Sept. 18	Stone Post Co.	19.00	
Sept. 18	Corey W. Sandford	11.89	
Sept. 18	John J. Keating	4.00	
Sept. 30	Alexander Potter	83.33	
Sept. 30	Corey W. Sandford	170.00	
Sept. 30	John J. Keating	100.00	
Sept. 30	Arthur Tepper	35.16	
Sept. 30	Arthur Tepper	31.00	
Oct. 18	Arthur Tepper	62.75	
Oct. 31	Alexander Potter	83.33	
Oct. 31	Corey W. Sandford	170.00	
Oct. 31	John J. Keating	100.00	
Oct. 31	Arthur Tepper	35.16	
Oct. 31	Arthur Tepper	23.00	
Oct. 31	Arthur Tepper	83.00	
			$1,374.37
			$ 796.96

The following bills were read, approved and ordered paid when properly audited. Vote by roll call resulting: 6 ayes, no noes:

Alexander Potter, Sept. salary	$ 83.33
Corey W. Sandford, Sept. salary and horse	170.00
John J. Keating, Sept. salary	100.00
Arthur Tepper, Sept. salary and rent	35.16
Arthur Tepper, petty cash	31.00
Arthur Tepper petty cash	62.75
Alexander Potter, October salary	83.33
Corey W. Sandford, Oct. salary and horse	170.00
John J. Keating, Oct. salary	100.00
Arthur Tepper, Oct. salary and rent	35.16
Arthur Tepper, petty cash	23.00
Arthur Tepper, petty cash	83.00
Alexander Potter, Nov. salary	83.34
Corey W. Sandford, Nov. salary and horse	170.00
John J. Keating, Nov. salary	100.00
Arthur Tepper, Nov. salary and rent	35.16
N. Y. Telephone Co.	14.20
Summit Herald	15.00
American Surety Co. of N. Y.	20.00
Corey W. Sandford, expense account	11.01

The various portions of the Engineer's report were taken up seriatim.

Re Opening Drain for Pond.—Mr. Dobbins, Chairman of the Mosquito Extermination Committee, addressed the meeting and explained that a contractor, who had several cellars to excavate in the immediate neighborhood, would fill in the pond entirely, provided it was drained so that his teams might draw the dirt into place without shoveling.

A motion was made and duly seconded that permission be given to open drain, and keep it open until the pond is drained, not to exceed three days, the drain then to be closed. So ordered.

Re the Experiment in Ventilating Irvington Sewers.—Mr. Sharp gave Irvington's views on the subject.

Mr. Smithers made a motion that, in view of the Engineer's report, and the attitude of the Irvington Board of Health in the matter, the resolution passed at last meeting be reconsidered. Seconded and so ordered, a vote by roll call resulting: 5 ayes and 1 no.

After a considerable discussion on the subject, in which both sides of the case were argued, General Knight offered a resolution as follows:

"Resolved, That the Engineer be authorized to expend a sum not exceeding $250.00 to place an experimental system of ventilation for the Augusta Street sewer.

"It being understood that in this action the Joint Board assumes no responsibility for the presence of the odors in that locality as they have accepted the report of the Engineer of the Joint Trunk Sewer, the sewerage engineer of Newark and the Engineer of the Town of Irvington heretofore made to the Joint Board and now on file in its records reporting that with proper ventilation under a change of the Health Code of Irvington the cause of the complaint will be eliminated.

"Provided, however, that the Board of Health of the Town of Irvington puts no obstacles in the way of carrying out the plans of our Engineer."

The resolution was duly seconded and a vote by roll call resulted: 6 ayes, no noes. So ordered.

Re Expense of repairing Grove Street Sewer.—The Secretary was directed to render the Town of Irvington a bill for $108.65.

Re West Orange-Orange Contract.—A motion was made that same be referred to the member from West Orange. So ordered.

Re South Orange Township Weir.—A motion was made that same be referred to the members from South Orange Village and Millburn. So ordered.

Dr. Kraemer, Newark's representative, presented the following communication:

"November 11, 1913.

"Dr. Charles F. Kraemer,
"786 Broad Street, Newark N. J.:

"Dear Sir:—There is a serious condition affecting the Joint Outlet Sewer as well as our lateral sewer in Fabyan Place. The Castle Ice Cream Co., situated just across the line in Irvington, is turning in so much water, mostly clean water from its ice plant, that the Fabyan Place sewer is continually overcharged and the Lyons Avenue branch of the Joint Outlet Sewer is also being seriously affected. Not only is this clean water from the plant being turned into the sewer but it is so arranged that a large quantity of surface water is permitted to enter during storms. I think this is a matter which should be referred to Mr. Potter for investigation.

"I have also been of the opinion that Newark was paying more than its just share of the cost of maintenance of the Joint Outlet Sewer. The original plan was for each of the seven (7) municipalities using the sewer to pay one-seventh of the maintenance cost. With the annexation of Vailsburg, Newark assumed the payment of its share so that it now pays two-sevenths, or 28.6 per cent. to each of the others 14.3 per cent, but at the same time has only one vote out of the seven and is not using the sewer, nor does it own capacity in the sewer in anything like the same proportion. The following table illustrates what I mean.

	Per Cent. of Allotted Capacity.	Per Cent. of Flow 1912.	Per Cent. of Maintenance Cost.
Summit	20.13	9.66	14.29
Newark	20.30	23.54	28.55
West Orange	16.80	21.89	14.29
South Orange	16.29	11.18	14.29
Irvington	16.06	28.21	14.29
Millburn	10.42	5.52	14.29

"If it is thought best to continue on the old equal payment plan Newark should at least be allowed two votes in the meeting.

"I would also call your attention to another condition arising from the annexation of Vailsburg. In the original construction, all lines serving two or more municipalities were parts of the Joint Outlet System and constructed by the Joint Meeting, but no lines were constructed to serve one municipality only, for example, of the two lines shown on the accompanying map running through Vailsburg, the westerly one served Vailsburg and South Orange and the easterly one Vailsburg and Newark, but both terminated at the Vailsburg line, as from this point on only South Orange and Newark respectively were sewered, and these sewers were constructed by the municipalities themselves. The annexation of Vailsburg therefore leaves the easterly line above referred to entirely within and serving only Newark. Should it not therefore cease to be part of the Joint Outlet Sewer and be considered and maintained as part of the Newark sewer system? Should this be done it would be a further argument in favor of reducing Newark's share of the maintenance cost, as the Joint Meeting would be relieved of the expense of maintaining this branch.

"Very truly yours,

"Edward S. Rankin,

"Engineer, Sewers and Drainage."

Taking up the subjects seriatim. A motion was made to refer to the Engineer the portion relating to Fabyan Place sewer, with request that he report regarding this at the next meeting. So ordered.

A motion was made that the question as to the legality of turning over to Newark the easterly line of the Vailsburg sewer, also the question as to the legality of Newark's having two representatives in the Joint Meeting be referred to Counsel for report at next meeting. So ordered.

It was decided to call a meeting in the second week in December for the purpose of considering the reports on above matters.

Three members of the Irvington Board of Health appeared before the meeting and the question of sewer ventilation in Augusta Street was again brought up.

They stated that it was the desire of the Board of Health that the stand-pipes be erected without at the same time making a comparative test by removing some house-traps in a similarly affected district.

The Chairman of the Joint Meeting told them of the resolution which had been passed earlier in the evening and said that the ground was fully covered by that, and that it would stand.

The following resolution was offered and seconded:

"Resolved, That the several municipalities do raise and pay to the Treasurer of the Joint Meeting the sum of $1,750.00, which shall be assessed upon the joint municipalities in the proportion fixed by the contract between the several municipalities as provided for the care and maintenance of the Joint Sewer, i. e., each municipality paying an equal amount. or one-seventh of such assessment (excepting the City of Newark, which shall pay two-sevenths, or one-seventh for Newark and one-seventh for Vailsburg), and further, that the Secretary be directed to notify the various municipalities of such assessment and the proportion to be paid by each; and be it further

"Resolved, That the said moneys be paid to the Treasurer of the Joint Meeting within twenty days of the 20th day of November, 1913.

"This is the assessment for the 4th quarter of 1913."

A vote by roll call resulted: 4 ayes, no noes (two members having left the meeting).

On motion the meeting adjourned.

ARTHUR TEPPER,
Secretary.

Joint Meeting of December 11, 1913.

A meeting of the Joint Meeting was held in South Orange Village Hall on Thursday evening, December 11th, 1913.

Present: Mr. Francis Speir, Chairman; Messrs. Kraemer, of Newark; Sharp, of Irvington; Allen, of South Orange; Kenney, of West Orange; Smithers, of Millburn, and Gen. Knight, of Summit. Messrs. Denman and Rankin, of Newark, were also present.

The Engineer read the following report, which was received and ordered placed on file:

"December 11, 1913.

"To the Joint Meeting:

"Gentlemen:—The principal matter referred to your En-

gineer at the last meeting was a report upon the subject matter of a letter submitted by Mr. Rankin, Engineer of Sewers and Drains of Newark, to Dr. Kraemer of the Newark Board of Works, in which were taken up, first, the question of the improper use made of certain sewers in the Town of Irvington by the Castles Ice Cream Company; second, the question of a readjustment of the maintenance charges; and third, the matter of Newark's representation in the Joint Meeting.

"The first matter being a purely engineering one, I shall report at length upon it. I have been in communication with Mr. Adrian Riker, Counsel for the Joint Meeting, in reference to the other matters. Mr. Riker will address the Joint Meeting directly upon these two matters. In this connection I submit copies of correspondence which has passed between Mr. Riker and myself in reference thereto:

"'New York, Nov. 28th, 1913.

"'Mr. Adrian Riker, Counsel for the Joint Trunk Sewer,

"'Market St., Newark, N. J.:

"'Dear Sir:—At the last meeting of the Joint Trunk Sewer, application was made by the City of Newark for permission to assume the ownership, control and maintenance of those portions of the Joint Trunk Sewer lying within the old Borough of Vailsburg.

"'Upon the accompanying sketch are shown all Joint Sewers in Vailsburg. Irvington, Vailsburg, Newark and South Orange contributed towards the construction of all of these sewers. There was no sub-division in Section 5 of the various branch lines of sewers. All sewers shown in blue upon the sketch submitted herewith serve as an outlet for South Orange as well as Newark (Vailsburg section, western portion). Those shown in red serve as an outlet for Irvington as well as Vailsburg. It is true that Irvington reaches the upper portions of this Joint Trunk Sewer through Newark's laterals through an interchange of courtesies with Newark and not through legal right, but this interchange of courtesies of course does not lessen the fact that the sewer in South Orange Avenue is vested in Irvington and has been paid for partially by Irvington.

"'There is no question in my mind as to the wisdom, if some way could be devised, of permitting Newark to take over the maintenance of these Joint Trunk Sewers through Vailsburg, since Newark so largely contributes to the flow of these sewers. It should be borne in mind, however, that even although it were possible to permit Newark to assume the maintenance of these sewers, this agreement would not lessen Newark's present obligation to pay two-sevenths of the maintenance charges of the entire Trunk Sewer unless same were remitted with the consent of

all other municipalities which are parties to the same. Therefore until the question of readjustment of maintenance charges is effected, the assumption by Newark of the maintenance of the Trunk Sewer in Vailsburg would place upon Newark the additional expense of maintaining these sewers in whole, to which they now contribute only two-sevenths.

"'I have set before you the engineering facts in connection with this matter. The right of the Joint Meeting to turn over these sewers to Newark is purely, it seems to me, one of law and hence not within my province.

"'Yours very truly,

"'ALEXANDER POTTER.'

"'December 3, 1913.

"'Mr. Alexander Potter,

"'50 Church St., New York City:

"'Dear Sir:—I have yours of November 28th with enclosure. As I stated on the telephone, I have already submitted to the Secretary of the Joint Meeting a written opinion upon the legal questions involved in your communication. There is no authority for the Joint Meeting surrendering any part of the system constructed by it. There is also no authority by which a municipality which has absorbed another of the contracting municipalities may be entitled to two votes in the Joint Meeting. The contract provided for the apportionment of the cost between the original contracting municipalities and when Newark absorbed Vailsburg, it also in my opinion undertook to perform its contract to pay one-seventh of the maintenance cost of the sewer. I have frequently expressed my personal opinion that the apportionment of the cost of maintenance at the present time is unfair to the City of Newark and should be rectified but as a legal problem I see but one solution and that is by a new agreement which will have to be agreed to by all the parties concerned.

"'Very truly yours,

"'ADRIAN RIKER.'

"Report Upon the Castles Ice Cream Co. Matter.

"On the afternoon of December 9, my assistant engineer, Mr. Atwater, inspected conditions in the vicinity of Castle's ice cream factory and found them to be as follows:

"This plant is located northwest of and about half a block from Fabian Place, between Loretta and Buffington Avenues. Loretta and Buffington Avenues run down-grade from Fabian Place and terminate close to the plant. At present, Castles' ice cream factory is the only user of the Loretta Avenue sewer and by far the largest user of the Buffington Avenue sewer.

"The sketch accompanying Mr. Rankin's report, which was drawn by Mr. Keating, Assistant Inspector of the Joint Sewer, indicated that all the roof-water from the factory finds its way into the Loretta Avenue sewer. Such is not the case. There is a perforated manhole cover located in the concrete driveway adjoining the factory, but this driveway drains away from the building to a drainage gutter and a very small amount of roof or storm water can enter by this manhole. The main connection is from the condenser and discharges about sixty gallons per minute into the Buffington Avenue sewer.

"As stated above, both Loretta and Buffington Avenues are lower at their terminations near the plant than at Fabian Place. The gutter of Fabian Place instead of being carried across these streets so as to conduct the water to the storm catch basin at Lyons Avenue, turns at the corners so as to divert the water down Loretta and Buffington Avenues. The upper end of the Buffington Avenue sewer is located at the end of the street in a hollow where all this drainage water collects, and photographs show that at times of heavy storms quite a pond forms at this point, covering the top of the manhole to a depth of about two feet. Mr. Castles has at his own expense constructed a six-inch pipe drain and several hundred feet of ditch to carry away the surface water, and this would probably be sufficient if the water from Fabian Place could be diverted.

"Inspection of the sewer on Loretta Avenue disclosed water standing in the manholes and indicate a clogged condition of the sewer. Mr. Atwater was told that the Irvington sewer men, when they cleaned the Loretta Avenue sewer, also cleaned about two hundred feet of the Fabian Place sewer and reported it very dirty. I believe that if steps were taken to conduct storm water along Fabian Place to Lyons Avenue it would result in benefit to all parties concerned.

"At the last session of the Joint Meeting, Mr. Dobbins, Chairman of the Mosquito Extermination Commission, addressed the meeting and secured permission to use the Joint Trunk Sewer in draining the pond in Newark, concerning which there has been considerable discussion heretofore. Permission was given him to keep the drain open for a period of three days. An investigation of the conditions at the pond made by my office, indicates, so far as an examination could disclose, that no actual damage has resulted by the granting of this permission. However, the drain, properly screened, has been permitted to remain open until today, when it was cut off by our inspector.

"The Chairman, Mr. Speir, has submitted to me a letter from the Irvington Board of Health, which is transmitted herewith without comment.

"Respectfully submitted,

"Alexander Potter."

"December 8th, 1913.

"Joint Sewer Commission,
"Mr. A. Tepper, Secretary:

"Gentlemen:—Your letter of November 29th, 1913, received and read at a regular meeting held on December 4, 1913. After discussion, a motion was made and carried to insist upon the original agreement that three stand pipes be placed upon Augusta Street to ventilate the sewer placed there by your Honorable Body.

"We remain,

"Irvington Board of Health,
"Julius Bartosch,
"Secretary."

A motion was made that the matters treated of in Engineer's report, affecting the City of Newark, be referred to Newark's Engineer of Sewers, etc., with a request that they act along the lines indicated therein, in providing relief for that district. So ordered.

A motion was made that the communication from the Irvington Board of Health be received and placed on file. So ordered.

"The following letter from Counsel was read:

"November 26, 1913.

"Mr. Arthur Tepper, Secretary,
"Summit, N. J.:

"Dear Sir:—I have your letter of November 24th, and in response would submit the following:

"The agreement with reference to the maintenance charges and their apportionment to the several municipalities was embodied in the original agreement for the construction of the sewer and has been subject to revision at any time that the municipalities might agree. Up to the present time no such agreement has been arrived at although as I remember it several attempts have been made to this end. The statement of the situation so far as capacity, actual user and cost of maintenance is concerned, speaks for itself, but there is no way in which the present arrangement can be changed except by the agreement of all the municipalities concerned.

"The theory of the Joint Meeting is that it is made up of the municipalities concerned in the operation of the sewer, represented by the body in each municipality, having control and charge of the sewers therein, or of a representative of such body. Where two municipalities have been merged, as is the case of Newark and Vailsburg, no provision has been made for any larger or other representation than the one vote in the Joint

Meeting, so that as the matter now stands, without agreement of the municipalities, and without authority of statute, I do not see how Newark could be allotted more than one vote in the Joint Meeting.

"Respecting that part of the system which now lies entirely within the City of Newark, my understanding is that the construction cost was borne by the Town of Irvington, the then Borough of Vailsburg, and the City of Newark. There is no provision in the statute which authorizes the surrender of any part of the system to any one or several of the municipalities concerned in the construction of it. I therefore am unable to advise that there is any provision of law by which that portion of the system which now lies entirely within the City of Newark and serves only the City of Newark can be surrendered to the City of Newark.

"Very truly yours,

"Adrian Riker."

A considerable amount of discussion followed on the subject of a revision of the basis of assessing maintenance charges, which resulted in the following motion:

Moved, That Counsel and Engineer formulate a principle according to which the maintenance cost shall be readjusted and report to Joint Meeting. So ordered.

The Engineer reported that he had taken up with the State Board of Health the matter of storm water flow in excess of sewer capacity, and had suggested the construction of tanks through which all sewage should go, the excess of discharge from tanks to go into streams in an unobjectionable condition. The Board of Health has not yet given consent.

The Engineer will take up the question with Counsel to formulate any needed legislation.

The following bills were read, approved and ordered paid, a vote by roll call resulting: 6 ayes, no noes:

Arthur Tepper, petty cash	$48.00
Arthur Tepper, petty cash	40.00
Summit Herald	18.00
Stone Post Co.	48.37
S. H. Rollinson	62.50
Francis Speir	15.00
Charles F. Kraemer	15.00
F. R. Sharp	15.00

E. S. Allen	10.00
J. J. Kenney	15.00
E. L. Smithers	15.00
J. G. D. Knight	10.00
J. J. Keating (expense)	1.75

On motion the meeting adjourned.

ARTHUR TEPPER,
Secretary.

Joint Meeting of February 26, 1914.

Meeting of the Joint Meeting held Thursday evening, February 26th, 1914, in South Orange Village Hall.

Present: Chairman Francis Speir, and Representatives Kraemer of Newark, Sharp of Irvington, Kenney of West Orange, Allen of South Orange, and Smithers of Millburn.

The minutes of the last meeting were approved as printed.

The following report of the Chief Engineer was read, accepted and ordered printed in the minutes:

"February 26, 1914.

"To the Joint Meeting:

"Gentlemen:—In Mr. Potter's absence on a professional trip to Europe, I beg to present in his behalf the following report of matters pertaining to the Joint Meeting.

"We have just reduced the gauge records for the year 1913, and submit herewith in tabulated form the contributing flows of the various municipalities to the Joint Trunk Sewer during the past year. The results are tabulated in accordance with the arrangement adopted by us last year in reporting upon the joint sewer flows for the years 1905-1912, inclusive, and bring this data up to date.

"The total flow in the Joint Trunk Sewer has increased 7.90 per cent. during the past year, and the average daily flow is now 52.9 per cent. of the total capacity of the sewer.

"We submit herewith a copy of a letter received from Mr. I. J. Casey, Jr., Town Engineer of Irvington, N. J., in reference to the sewer proposed to be built by South Orange Township from the Newark almshouse in South Orange Township to Florence Avenue in Irvington, to take care of the almshouse and a portion of the Township, said sewer to discharge through Irvington's sewerage system into the Joint Trunk Sewer:

"'Irvington, N. J., Feb. 23, 1914.

"'Mr. Alexander Potter,
"'114 Liberty Street,
"'New York, N. Y.:

"'Dear Sir:—Mr. Sharp, Irvington's representative in the Joint Sewer Meeting, has requested me to forward you a plan of the proposed South Orange Township connection. I regret to state neither the Township or the City of Newark have any plans made.

"'The proposed agreement, however, is this: The City of Newark having constructed its almshouse in South Orange Township on Irvington Avenue is desirous of connecting the same with a sewer. There being no sewer in that section of the Township, they request of Irvington the privilege of connecting with the sewer at Clinton Avenue west and Florence Avenue, the Township of South Orange to build the sewer and the City of Newark to sell to said Township capacity in the Joint Trunk Sewer (forty acres) for $2,400.

"'The Town of Irvington demands that in the event of the Florence Avenue sewer being overcrowded, the Township shall upon the demand of the town build a relief sewer through Boyden Avenue to Elmwood Avenue and North Forty-third Street, and in the event of that section becoming crowded to extend its relief line through North Forty-third Street and Forty-third Street, Halstead Avenue and Fortieth Street to connect with the present 10-inch sewer on Fortieth Street.

"'It is also asked that the Township contribute $100 per annum to Irvington for cleaning sewers.

"'The City of Newark agrees to allow Irvington free of charge to use its Vailsburg Storm water Sewer.

"'The matter is referred to you and the Joint Meeting to ascertain whether the commission will agree to the arrangement inasmuch as it will become necessary to have additional gauges at the points where said sewers connect with the Irvington sewer.

"'The Town of Irvington also desires to be assured by the Joint Meeting that none of the additional capacity taken will be charged against its capacity in the Joint Sewer.

"'Very truly yours,

"'I. J. Casey, Jr.,
"'Town Engineer.'

"It is our opinion that the construction and maintenance of this sewer is strictly a matter between Newark, South Orange Township and Irvington. We are further of the opinion that in view of the congested condition of Irvington's and Newark's

sewers, the almshouse should seek an outlet through South Orange Village provided reasonable financial arrangements can be made with the Village. While under conditions of normal flow both Newark and Irvington have sufficient capacity to take care of this extra load upon the sewer, an examination of the records will indicate that both Irvington's and Newark's capacities are exceeded some times for two days at a time after protracted wet spells, and the capacity of the sewer to accept additional increments must be gauged not only by the normal flow but by the maximum flow.

"If the municipalities concerned decide on the construction of this sewer as outlined in Mr. Casey's letter, the only question that should be raised at this time is the maintenance of a suitable gauge at the Irvington boundary line so that the flow from South Orange Township and Newark can be accurately measured and charged against Newark's flow. By putting the care of this gauge under the direction of the Joint Meeting, the interest of all concerned will be best conserved, and we are in favor of having this done.

"The municipalities concerned should pay annually to the Joint Meeting a small amount which should be equal to the estimated annual cost of taking care of this gauge, reducing the records, and making the proper additions to and deductions from Irvington's and Newark's flows.

"Mr. Neafsey, Superintendent of Roads and Sewers of Elizabeth, has made a personal request that he be permitted to make connections to the Joint Trunk Sewer without the necessity of having these connections inspected by the Inspector of the Joint Trunk Sewer or his agent. As the contract with Elizabeth is perfectly clear on this point, we have told Mr. Neafsey that this could not be permitted except in case of emergency.

"Respectfully submitted,

"Albin H. Beyer,

"Principal Assistant."

TABLE I.

AVERAGE DAILY CONTRIBUTING FLOW TO THE JOINT TRUNK SEWER BY THE VARIOUS MUNICIPALITIES FOR THE YEAR 1913.

(Expressed in thousands of gallons.)

	Newark.	Irvington.	So. Orange.*	W. Orange.	Summit.	Millburn.*	Total.
Daily flow	2,660	2,700	1,231	2,660	1,176	672	11,099
Allotted capacity	4,263	3,373	3,421	3,528	4,227	2,188	21,000
Per cent. of capacity used in 1913 ..	62.4	80.1	36.0	75.4	27.8	30.7	52.9

*Includes contributing flow from So. Orange Township.

TABLE II.

MAXIMUM WEEKLY FLOW, IN THOUSAND GALLONS PER DAY, CONTRIBUTED IN 1913 TO THE JOINT TRUNK SEWER BY THE VARIOUS MUNICIPALITIES.

	Newark.	Irvington.	So. Orange.*	W. Orange.	Summit.	Millburn.*	Total.
Flow	3,504	4,180	2,180	4,800	1,900	1,120	17,684
Allotted capacity	4,263	3,373	3,421	3,528	4,227	2,188	21,000
Per cent. of capacity used in 1913 ..	82.2	123.9	63.8	136.0	45.0	51.2	84.5

*Includes contributing flow from So. Orange Township.

TABLE III.

PERCENTAGE RATIO OF THE AVERAGE YEARLY, MAXIMUM WEEKLY, MAXIMUM DAILY AND MAXIMUM HOURLY FLOW OF THE JOINT TRUNK SEWER FOR THE VARIOUS MUNICIPALITIES.*

	Newark.	Irvington.	So. Orange.	W. Orange.	Summit.	Millburn.	Total.
% Average Yearly ...	62.4	80.1	36.0	75.4	27.8	30.7	52.9
% Maximum Weekly ...	82.2	123.9	63.8	136.0	45.0	51.2	84.5
% Maximum Daily	152.0	140.0	74.0	148.0	87.0	89.0	90.0
% Maximum Hourly ...	157.0	158.0	82.0	156.0	130.0	143.0	100.0+

*Percentages based on allotted capacity.

The following report from the Treasurer was read, accepted and ordered printed in the minutes:

"To the Various Municipalities Comprising the Joint Sewer Meeting:

"Gentlemen:—The Treasurer respectfully reports that on November 20th, 1913, the date of his last report, he had on deposit in the Orange National Bank the sum of $799.46, with one warrant for $2.50 outstanding, since which time he has deposited, as shown on Schedule I, the sum of $1,608.65, to which is added the item of $2.12 interest, so that the total amount of cash on hand is $2,407.73.

"The Treasurer respectfully reports that he has signed warrants, as shown on Schedule II, amounting to $1,927.80, so that the total amount of cash on hand at this date is the sum of $479.93. Warrant No. 2017 for $2.50 is still outstanding, as are also warrants 2064, 2065 and 2066 for $83.33, $170 and $100 respectively, so that the Treasurer now has on deposit in the Orange National Bank the sum of $835.76, with said warrants outstanding.

"All of which is respectfully submitted this 26th day of February, 1914.

"SIMEON H. ROLLINSON,
"Treasurer."

Itemized Statement.

1913.			
Nov. 20	Balance	$ 796.96	
Nov. 4	Millburn	250.00	
Nov. 28	Newark	500.00	
Dec. 1	Irvington	250.00	
Dec. 4	Summit	250.00	
Dec. 4	West Orange	250.00	
Dec. 4	Irvington	108.65	
			$2,407.73

Disbursements.

1913.			
Nov. 26	Alexander Potter	$ 83.34	
Nov. 26	Corey W. Sandford	170.00	
Nov. 26	John J. Keating	100.00	
Nov. 26	Arthur Tepper	35.16	
Nov. 26	N. Y. Telephone Co.	14.20	
Nov. 26	Summit Herald	15.00	
Nov. 26	American Surety Co. of N. Y.	20.00	
Nov. 26	Corey W. Sandford	11.01	
Nov. 26	Arthur Tepper	48.00	
Nov. 26	Arthur Tepper	40.00	
Dec. 12	Summit Herald	18.00	
Dec. 12	Stone Post Co.	48.37	
Dec. 12	S. H. Rollinson	62.50	
Dec. 12	Francis Speir	15.00	
Dec. 12	Charles F. Kraemer	15.00	
Dec. 12	Frank R. Sharp	15.00	
Dec. 12	E. S. Allen	10.00	
Dec. 12	John J. Kenney	15.00	
Dec. 12	E. L. Smithers	15.00	
Dec. 12	J. G. D. Knight	10.00	
Dec. 12	J. J. Keating	1.75	
Dec. 22	Alexander Potter	83.33	
Dec. 22	Corey W. Sandford	170.00	
Dec. 22	John J. Keating	100.00	
Dec. 22	Arthur Tepper	35.16	
1914.			
Jan. 31	Alexander Potter	83.33	
Jan. 31	Corey W. Sandford	170.00	
Jan. 31	John J. Keating	100.00	
Jan. 31	Arthur Tepper	35.16	
Feb. 21	Alexander Potter	83.33	
Feb. 21	Corey W. Sandford	170.00	
Feb. 21	John J. Keating	100.00	
Jan. 31	Arthur Tepper	35.16	
			1,927.80
	Cash on hand		$ 479.93

The following letter from the Chief Engineer was read:

"January 26, 1914.

"Joint Meeting:

"Gentlemen:—I submit herewith a copy of a letter received from James P. Hall, Inc.:

"'JAMES P. HALL, INC.,
"'MASONS' MATERIAL,
"'225 Henderson Street.
"'Jersey City, January 23rd, 1914.

"'Mr. Alexander Potter,
"'Engineer, Joint Sewer Commission,
"'50 Church St.,
"'N. Y. City.

"'Dear Sir:—When I completed the contract for Section 4 of the Joint Sewer and received my final payment in 1904, there was retained from said final payment $100.00 with which to make possible repairs.

"'I am advised that this money is still to my credit and has not been used and I would request that you please present the matter to the Joint Sewer Commission at their next meeting and see that the money is returned to me.

"'Yours very respectfully,
"'JAS. P. HALL.'

"This amount was withheld from Hall as being sufficient, in my judgment, to make good defects in his surface work over certain properties in South Orange. For a long time we endeavored to get the consent of the property owners claiming injury to accept this amount but were unable to reach any agreement with them. We have heard nothing from these people for the last four or five years. It is a matter for the Joint Meeting to decide whether, under the circumstances, this money should be returned to James P. Hall.

"Very truly yours,
"ALEXANDER POTTER."

A motion was made and duly seconded that the $100.00 be paid to Mr. Hall. A vote by roll call resulted 5 ayes and no noes. So ordered.

The following bills were read, approved and ordered paid, a vote by roll call resulting 5 ayes, no noes:

Alexander Potter, December salary	$ 83.33
Corey W. Sandford, December salary and horse	170.00
John J. Keating, December salary	100.00
Arthur Tepper, December salary and office	35.16
Alexander Potter, January salary	83.33
Corey W. Sandford, January salary and horse	170.00

John J. Keating, January salary	100.00
Arthur Tepper, January salary and office	35.16
Alexander Potter, February salary	83.33
Corey W. Sandford, February salary and horse	170.00
John J. Keating, February salary	100.00
Arthur Tepper, February salary and office	35.16
N. Y. Telephone Co.	19.80
Summit Herald	12.00
Corey W. Sandford, expense account	3.50
John J. Keating, expense account	1.60

The Engineer's report was then referred to again, and the question of the connection for Almshouse was discussed.

Mr. Sharp, for Irvington, asked that the Joint Body give its approval to the transaction.

Mr. Speir, Chairman, answered that it has been decided by Counsel that the Joint Meeting has no jurisdiction over the capacity allotted to any municipality, other than that of maintaining its established rules and regulations as to the use of the sewer. The capacity belonging to each municipality is absolutely its own property and as such can be sold or exchanged as its owner thinks advisable.

Mr. Sharp asked that the Secretary be directed to write to the Town of Irvington stating this decision, and the Chairman accordingly directed the Secretary to do so.

The following resolution was then offered and seconded, a vote by roll call resulting 5 ayes, no noes:

"Resolved, That the several municipalities do raise and pay to the Treasurer of the Joint Meeting the sum of $1,750.00, which shall be assessed upon the joint municipalities in the proportion fixed by the contract between the several municipalities as provided for the care and maintenance of the Joint Sewer, i. e., each municipality paying an equal amount or one-seventh of such assessment (excepting the City of Newark, which shall pay two-sevenths, or one-seventh for Newark and one-seventh for Vailsburg), and further, that the Secretary be directed to notify the various municipalities of such assessment and the proportion to be paid by each; and be it further

"Resolved, That the said moneys be paid to the Treasurer of the Joint Meeting within twenty days of the 31st day of March, 1914.

"This is the assessment for the 1st quarter of 1914."

There being no further business the meeting adjourned.

ARTHUR TEPPER,
Secretary.

Joint Meeting of May 7, 1914.

Meeting of the Joint Meeting held Thursday evening, May 7th, 1914, in South Orange Village Hall.

Present: Francis Speir, Chairman; Messrs. Kraemer of Newark, Sharp of Irvington, Allen of South Orange, Smithers of Millburn and Gen. Knight of Summit.

The minutes of the last meeting were approved as printed.

The Engineer read the following report and correspondence, which was accepted and ordered placed in full on the minutes:

"May 7, 1914.

"The Joint Meeting:

"Gentlemen:—On the question of the establishment of a new maintenance charge the Joint Meeting authorized your Engineer to confer with Counsel, Mr. Riker, to the end that an apportionment might be reached that would be acceptable to all parties in interest.

"I submit herewith correspondence which has passed between your Engineer and Counsel in reference to this matter, and as a result of this correspondence and conference between your Counsel and Engineer we recommend the following general principle as an equitable basis of paying for the cost of maintenance:

"The maintenance cost of the Joint Trunk Sewer for the year will be divided into two parts: first, general maintenance expense, such as Executive Committee, Counsel fees, Secretary, Treasurer, rent, etc., and second, the operating expense which will include salaries of the Engineer, inspectors and all labor, materials and supplies. The general expense shall be divided in the proportion of capacities in the Main Trunk Sewer. The special expense of each section shall be divided in the proportion of the capacity owned by each town in such section.

"The total probable cost for each year shall be estimated in advance and the sum of these two items of expense for each municipality divided by the total estimated expense represents the percentage of expense to be borne by each municipality.

"An examination of the tables submitted herewith shows that in general, with the exception of Newark, there is no extraordinary difference between the amount estimated to be paid during the coming year and the amounts paid under the one-seventh arrangement which has held good since the inception of the Joint Trunk Sewer. In the opinion of the writer these changes tend towards a fairer distribution of the expense.

"I submit herewith a table showing a comparative statement of the various methods suggested from time to time for distributing the maintenance assessment. Column 1 is the percentage of capacity each town has in the main branch. Column 2 is the present distribution of the maintenance cost. Column 3 gives the actual maintenance assessment for 1913. Column 4 is the percentage distribution recommended on May 23, 1907. Column 5 is the percentage distribution recommended September 23, 1909. Column 6 is the actual percentage distribution during the year 1913. Column 7 is the percentage distribution recommended for the year 1914. Column 8 represents the amount to be paid under the new method of assessment, assuming the same distribution and total expenditure in 1914 as in 1913.

"It will be noticed that the theoretic figures for Millburn during the last year are less than Millburn has paid in the past and less than the suggested income from Millburn during 1914. The reason for this discrepancy is that the Joint Meeting in the past has actually been put to less expense on Millburn's account than should have been the case, due to the fact that there is a smaller percentage of Millburn's sewage metered than of any other municipality. In the future Millburn must assume the cost of maintaining the gauges which are to be installed this summer to measure the flow from South Orange Township. The greater portion of this additional cost must be borne wholly by Millburn for the reason that Millburn having sold a portion of its capacity to an outside municipality, no other town should be taxed for any expense in connection with the conduct of this private transaction. At the same time, the Joint Meeting must reserve to itself the right to check up the use being made of the sewer by the various contributing municipalities.

"I submit herewith a copy of a letter from Mr. Rankin, Engineer of Sewers of Newark, in reference to the deepening of the sewer in South Orange Avenue and the diversion of a portion of the sewage from one branch of the Joint Trunk Sewer running through the Vailsburg section of Newark to another:

"'Engineering Department,
"'BOARD OF STREET AND WATER COMMISSIONERS,
"'Newark, N. J.

"'City Hall, Newark, N. J., May 4th, 1914.
"'Department of Sewers and Drainage.
"'Mr. Alexander Potter,
"'50 Church Street,
"'New York City:

"'Dear Sir:—I am sending you herewith a blue print of the Vailsburg sewers with two suggested improvements, about which I spoke to you over the telephone this morning. As you know, the branch of the Joint Outlet Sewer on South Orange Avenue between Halstead Street and Sandford Avenue is very shallow, and, as it is proposed to pave this street, I have suggested to the Board the propriety of laying an additional sewer between these points at a greater depth, and it was decided to bring the matter before the Joint Meeting.

"'The other improvement suggested is to cut off 26 acres of the flow in Brookdale Avenue by connecting the Sandford Avenue sewer through Silver Street with Stuyvesant Avenue, as shown on the print in red lines. I would be glad to have any suggestions from you in regard to both of these propositions.

"'Very truly yours,
"'Edward S. Rankin,
"'Engineer, Sewers and Drainage.'

"The sewer on South Orange Avenue between Halstead and Sandford Streets is not deep enough to make adequate provision for the deep cellars which have within the last few years been built upon this street, although the lower end of this sewer is amply deep to provide an outlet for lateral sewers along this street for any reasonable depth. I have discussed the matter of the responsibility for deepening this sewer with Counsel and he is of the opinion that the cost of deepening this sewer is a matter wholly within the jurisdiction of Newark and the cost of constructing this deepened sewer should be borne wholly by the City of Newark. This is Mr. Riker's oral opinion, and I would suggest that this report be submitted to Mr. Riker for his written opinion.

"Mr. Riker is also of the opinion that, while he joins me in approving the construction of the short connection suggested by Mr. Rankin to relieve the Brookdale Avenue sewer, this matter is also a matter which should come under the sole jurisdiction of the City of Newark. I would suggest that the same course be taken with this recommendation.

"In reference to the construction of the storage tanks for the relief of the Joint Trunk Sewer during excessive rains, your Engineer simply reports progress.

"Respectfully submitted,

"ALEXANDER POTTER."

TABLE I.

COMPARATIVE STATEMENTS OF VARIOUS METHODS SUGGESTED FROM TIME TO TIME FOR DISTRIBUTING THE MAINTENANCE ASSESSMENT OF THE JOINT TRUNK SEWER.

(Ratios expressed in per cent. Amounts given to the nearest dollar.)

	1	2	3	4	5	6	7	8
Newark ...	20.30%	28.57%	$1,741	24.49%	24.49%	22.80%	21.71%	$1,323
Irvington..	16.00	14.28+	871	18.37	16.33	18.02	17.18	1,047
Summit ..	20.13	14.28+	871	16.33	14.28	16.71	15.92	970
So. Orange	16.29	14.28+	871	14.28	14.28	16.87	16.08	980
W. Orange	16.80	14.28+	871	14.28	14.28	16.96	16.17	985
Millburn ..	10.42	14.28+	871	12.25	14.28	8.64	12.94	789
	100.00%	99.97%	$6,096	100.00%	97.94%*	100.00%	100.00%	$6,094

1=Allotted capacity.
2=Present percentage distribution.
3=Actual maintenance assessments for 1913.
4=Percentage distribution recommended May 23, 1907.
5=Percentage distribution recommended Sept. 23, 1909.
6=Actual percentage distribution during 1913.
7=Percentage distribution recommended in 1914.
8=Amount to be paid under new method of assessment, assuming the same distribution and total expenditure in 1914 as in 1913.
*1/49 not allotted.

TABLE II.

MAINTENANCE COST OF JOINT TRUNK SEWER FOR THE YEAR 1913 DISTRIBUTED ACCORDING TO MUNICIPALITIES

	Irvington.	Millburn.	Newark.	South Orange.	Summit.	West Orange.
General	$ 205	$133	$ 259	$ 208	$ 256	$ 214
Sections 1 and 2	124	80	157	126	156	130
Section 3		120		169	231	194
Section 4				450		468
Section 5	769		973	75		
Section 6		194			375	28
	$1,098	$527	$1,389	$1,028	$1,018	$1,034
Grand total, $6,094.00.						
Percentage ratio	18.02	8.64	22.80	16.87	16.71	16.96

"April 21, 1914.

"Mr. Adrian Riker,
"Counsel for the Joint Meeting,
"164 Market Street, Newark, N. J.:

"Dear Sir:—In accordance with Mr. Potter's instructions, we have made a thorough study as to the best method of distributing the maintenance cost of the Joint Trunk Sewer among the contributing municipalities, and beg to report as follows:

"The Joint Trunk Sewer records show that this subject has twice been under consideration. On the 24th of April, 1907, Mr. Potter submitted a report to the Joint Meeting showing what the basis of the distribution would be if the maintenance expense were distributed in accordance with the allotted capacity of each municipality, or if it were distributed in accordance with the proportion of the actual flow contributed to the sewer by the respective municipalities. At that time Mr. Potter suggested that a committee be appointed to report upon this matter.

"Such a commitee was appointed, which reported to the Joint Meeting on May 23, 1907, recommending a distribution of the maintenance expense along more or less empirical lines, with the exception that the expense of rebuilding, reconstruction, etc., be distributed in the proportion in which the municipalities contributed to the original cost of construction of the Joint Trunk Sewer.

"In 1909 the matter of distributing the maintenance assessment was again taken up, and on September 23, of that year, a committee consisting of Messrs. Denman, Smithers, Lacombe and Merrill recommended a slightly different method of distribution of the maintenance assessment from that recommended in 1907.

"To formulate a principle according to which the method of distribution of the maintenance assessment shall be readjusted and one which will be fair to all parties concerned, we have investigated the actual distribution of the maintenance cost of the Joint Trunk Sewer during the past years. Table I, presented herewith, shows in detail the distribution of the maintenance cost among the various sections of the Joint Trunk Sewer for the year 1913. All of those items which are of a general nature and are strictly administrative expenses have been classified as "general."

"In Table II we have distributed the amounts given at the foot of the columns in Table I among the contributing municipalities in the proportion in which they contributed to the cost of original construction of the Joint Trunk Sewer and its various branches. The only exception is that of the general or administrative cost, which has been distributed equally among the various municipalities.

"Table III is a comparative statement of the various methods suggested from time to time for distributing the maintenance as-

sessment of the Joint Trunk Sewer. This table is constructed primarily to bring out the difference between the method of distribution now recommended and those formerly suggested.

"All former committees have reported that Newark should pay 12/49 of the maintenance cost. This proportion corresponds almost exactly with the actual maintenance charge for Newark during the year 1913.

"The charge fixed for Irvington has varied between the limits of 8/49 and 9/49. During 1913 the actual maintenance charge for Irvington was 8.65/49. This report recommends that Irvington's maintenance assessment be fixed at 8/49.

"In 1907 it was recommended that Summit pay 9/49 of the maintenance cost, and in 1909, 8/49. During the past year the actual maintenance cost for Summit was only 8.04/49. It is therefore recommended that Summit pay 8/49 of the maintenance assessment.

"There has been a unanimous agreement that South Orange pay 7/49 of the maintenance cost, although during the past year the actual cost was 7.59/49. No change, therefore, is recommended.

"The proportionate charge for West Orange was fixed at 7/49 by former committees. The actual cost during the past year has been 8.04/49. It is recommended that the maintenance cost for West Orange be increased to 8/49.

"The greatest discrepancies exist in the case of Millburn. In 1907 the committee fixed 6/49 as a fair proportion of the total maintenance cost for Millburn. This was increased to 7/49 in 1909. During the past year Millburn's actual maintenance cost was only 4.66/49. It is recommended that in the future Millburn pay at least 6/49. This increase from 4.66/49 to 6/49 is deemed advisable because of the fact that a large portion of South Orange Township's flow which is chargeable to Millburn enters the Joint Trunk Sewer unmetered. As soon as meters are installed on the South Orange Township sewers the maintenance cost for Millburn, due to the additional expense of taking care of and reading the meters, will be materially increased, and 6/49 is considered to be a very fair proportion.

"Attention is called to the fact that the distribution recommended September 23, 1909, is not complete in that there was 1/49 of the total maintenance charge which had not been accounted for in the distribution.

"Summary.

"We are of the opinion that the distribution of the maintenance cost as worked out herein is as fair a one to all concerned as it is possible to devise. We therefore unqualifiedly recommend the adoption of the following distribution of the maintenance assessment among the various municipalities:

Newark	12/49
Irvington	8/49
Summit	8/49
South Orange	7/49
West Orange	8/49
Millburn	6/49
Total	49/49

"We have also investigated the maintenance records for the years prior to 1913. 1912 was an unusual year in that a large portion of the maintenance expense is chargeable to the Drake case, and the year, therefore, cannot be used as a basis for working out a just method of distribution. Prior to 1912 it is impossible to obtain exact data as to the distribution of cost, as Mr. Corey Sandford, the Chief Inspector, is not familiar enough with the maintenance of the Joint Trunk Sewer prior to that time to give us much assistance in working out a proper distribution of the various items. From our knowledge and connection with the Joint Trunk Sewer, the year 1913 represents average conditions and can, therefore, be used as a basis for distributing maintenance costs.

"Respectfully submitted,

"Albin H. Beyer,
"Principal Assistant Engineer."

TABLE I.

MAINTENANCE COST OF THE JOINT TRUNK SEWER FOR THE YEAR 1913—DISTRIBUTED ACCORDING TO SECTIONS.

		Section.					
	Gen'l.	1	2	3	4	5	6
Salary of Engineer ..		$180	$ 90	$180	$180	$ 280	$ 90
Chief Inspector		220	70	205	430	820	295
Assistant Inspector ..		136	42	120	256	485	176
Inspector's Expenses..		7			10	20	10
Secretary and Rent ..	$ 422						
Secretary, Petty Cash		20		190	29	200	20
Treasurer	250						
Adrian Riker, Counsel	300						
Summit Herald	78						
Executive Committee.	110						
N. Y. Telephone Co..	79						
J. A.Williams & Son		8					6
A. J. States	2						
Henry R. Ball	14						
Stone Post Co.				19			
American Surety Co..	20						
Queen & Co.					13	12	
Total	$1,275	$571	$202	$714	$918	$1,817	$597

TABLE II.

MAINTENANCE COST OF JOINT TRUNK SEWER FOR THE YEAR 1913 DISTRIBUTED ACCORDING TO MUNICIPALITIES.

	Irvington.	Millburn.	Newark.*	South Orange.	Summit.	West Orange.
General	$ 183	$182	$ 364	$ 182	$182	$ 182
Sections 1 & 2	124	80	157	126	156	130
Section 3...		120		169	231	194
Section 4...				450		468
Section 5...	769		973	75		
Section 6...		194			375	28
Total	$1,076	$576	$1,494	$1,002	$944	$1,002

Grand total, $6,094.

*Includes Vailsburg.

TABLE III.

COMPARATIVE STATEMENT OF VARIOUS METHODS SUGGESTED FROM TIME TO TIME FOR DISTRIBUTING THE MAINTENANCE ASSESSMENT OF THE JOINT TRUNK SEWER.

	1	2	3*	4	5
Newark	9.49/49	12/49	12/49	12.02/49	12/49
Irvington	7.89/49	9/49	8/49	8.65/49	8/49
Summit	9.86/49	8/49	7/49	8.04/49	8/49
South Orange	7.98/49	7/49	7/49	7.59/49	7/49
West Orange	8.23/49	7/49	7/49	8.04/49	8/49
Millburn	5.10/49	6/49	7/49	4.66/49	6/49

1=Distribution in accordance with allotted capacity.
2=Distribution recommended May 23, 1907.
3=Distribution recommended Sept. 23, 1909.
4=Actual distribution during 1913.
5=Distribution recommended in 1914.

*1/49 not allowed, column adds up to 48/49.

"RIKER & RIKER,

"ATTORNEYS AND COUNSELLORS AT LAW,
"Lawyers Building,
"164 Market St., Newark, N. J.

"April 22, 1914.

"Subject: In the Matter of Joint Meeting.

"Mr. Alexander Potter,
"50 Church Street,
"New York.

"Dear Sir:—I have yours of April 21st, with enclosures. The real adjustment of the cost of maintenance of the Joint Sewer, suggested by you, based upon the cost of maintenance for the year 1913, involves a gross amount of $240 so far as Newark is concerned, and $120 for Irvington and Summit and West Orange, and a decrease from Millburn of $240. These figures, I suppose, will be subject to variance from year to year, and it may be questioned whether the arbitrary apportionment of 2/7 against Newark and 1/7 against each of the other municipalities will not in the long run be approximately accurate.

"In thinking the matter over, it has occurred to me that a more exact method of determining the apportionment of cost and maintenance would involve a somewhat intricate calculation, but one which is not impossible to make. My thought is that as to Section I, which is used by all of the municipalities, the cost of

inspection for the year should be apportioned to it on the basis of the length of line as compared with the total length of line of the sewer and its branches; that there should be added to this apportionment of the inspection charges, such actual labor and material as might be required in maintaining the section and that the total cost should then be apportioned between the municipalities on the basis of the percentage of the capacity to which each is entitled. Each of the other sections would then be treated upon the same theory, and the cost determined for each section apportioned to the municipalities using the same in the ratio of their capacity in it. The total charges for the year would then be determined for each municipality upon percentages, and the administration expenses would then be apportioned upon the percentages so determined. An agreement between the municipalities that the cost should be determined each year upon this principle, would be a solution which would be permanent. Of course, the apportionment would have to be made by the Engineer and adjusted at the end of each year.

"I am not sure that the plan outlined is practicable, but submit it to you for your consideration.

"Yours very truly,

"Adrian Riker."

"New York, April 23, 1914.

"Mr. Adrian Riker,
"164 Market Street,
"Newark New Jersey.

"Dear Sir:—Your letter of April 22nd, in reference to the adjustment of the cost of maintenance of the Joint Sewer, is received in Mr. Potter's absence.

"We did not intend to have the ratios worked out by us vary ordinarily from year to year, as these ratios represent average conditions. The method of getting at the exact proportion is based on the principle set forth in your letter with the exception that the inspection has not been distributed in accordance with the length of the various sections, but has been based upon the actual cost of inspection. We find that the length of the line has nothing to do with the cost of inspection. Certain lines where we encounter trouble have to be inspected a great deal more frequently than others.

"Another point wherein the principle promulgated by you differs from the one assumed by us in getting at the ratio values is that the administration expense has been divided by us evenly among the seven contributing municipalities; that is, Newark, including Vailsburg, pays 2/7 and each of the other municipalities 1/7.

"As you suggest, it is possible to determine each year the exact ratio of cost chargeable to each municipality, but we believe

it hardly necessary to go to all this refinement as average values should be close enough on account of the relatively small amounts involved.

"We expect Mr. Potter to return from his Western trip some time during the week beginning April 26th.

"Yours very truly,

"ALBIN H. BEYER,

"Principal Assistant."

"RIKER & RIKER,

"ATTORNEYS AND COUNSELLORS AT LAW,

"Lawyers Building,

"164 Market St., Newark, N. J.

"April 25, 1914.

"Subject: Joint Meeting.

"Mr. Alexander Potter,

"50 Church Street,

"New York City:

"Dear Sir:—What is required in the matter of the maintenance charges of the sewer is to reach a method or principle of apportioning the cost annually to the various municipalities concerned. Of course if the records are kept in such way that the actual time expended in inspection of each section can be accurately determined, then that is the most accurate method of apportionment of that item possible. If not, then it strikes me that the average of inspection charges should properly be based upon the length of line in each section.

"So far as administration charges are concerned, I am very much of opinion that the fairest way will be that suggested by me, namely, that based upon capacities rather than the arbitrary sevenths. If an arbitrary principle is to be adopted there would seem to be no reason why Newark's share should not be made a sixth rather than two-sevenths, and each of the other municipalities charged one-sixth.

"Very truly yours,

"ADRIAN RIKER."

Regarding the deepening of the sewer in South Orange Avenue, and the diversion of a portion of the sewage from one branch to another of the Joint Trunk Sewer, it was moved and seconded that these requests be submitted to Counsel for his opinion, and so ordered. In the meantime, however, the Joint Meeting has no objection to the City of Newark proceeding with the work proposed, subject to the opinion of Counsel.

The following bills were read, approved and ordered paid, a vote by roll call resulting 5 ayes, no noes:

Alexander Potter, March salary	$ 83.33
C. W. Sandford, March salary and horse	170.00
John J. Keating, March salary	100.00
Arthur Tepper, March salary and office	35.16
Alexander Potter, April salary	83.33
C. W. Sandford, April salary and horse	170.00
John J. Keating, April salary	100.00
Arthur Tepper, April salary and office	35.16
N. Y. Telephone Co.	20.35
Matthias Plum	13.50
Summit Herald	12.00
S. H. Rollinson	62.50
John J. Keating, expense	1.10

It was moved and seconded that the Secretary's and Treasurer's books be audited by a competent auditor, and report made at next meeting.

On motion the meeting adjourned, to meet on Thursday evening, June 18th, at the Millburn Town Hall.

ARTHUR TEPPER,
Secretary.

Joint Meeting of June 18, 1914.

The annual meeting of the Joint Meeting was held on Thursday evening, June 18, 1914, in the Millburn Township Building, at 8 o'clock.

Present: Mr. Francis Speir, Chairman; Messrs. Smithers, of Millburn; Knight, of Summit; Kraemer, of Newark; Stanley, of Irvington; Kenney, of West Orange, and Mr. F. J. Lovatt, representing South Orange, in the absence of Mr. Allen.

Messrs. Denman and Rankin, of Newark, and Mr. Wm. Byrd, of Millburn, were also present.

The minutes of the last meeting were approved as printed.

The Engineer read the following report, which was accepted and ordered placed on file:

"New York, June 18, 1914.

"To the Joint Meeting:

"Gentlemen:—Since the last meeting your Engineer has given attention to the question of the best method of dealing with the sewer overflows during times of storm. Plans have been prepared for relieving the situation in Irvington. A conference was had this afternoon between the Chairman of the Joint Meeting, the Chief of the Division of Sewerage of the State Board of Health and your Engineer, at which this matter was informally discussed. It was suggested by Dr. Fitz Randolph, Chief of the Division of Sewerage, that representatives from the Joint Body attend the next meeting of the State Board of Health, on the 30th of June, for the purpose of discussing this matter to the end that a solution of the problem acceptable at once to the Joint Meeting and to the State Board be reached. It is therefore recommended that such a committee be appointed to be present at the next meeting of the State Board of Health for this purpose.

"Outside of the ordinary routine in connection with the maintenance of the sewer, no other matters of importance have arisen in connection with the Joint Trunk Sewer.

"Respectfully submitted,

"Alexander Potter."

Mr. Speir then read the following communication from the State Board of Health:

"Trenton, May 21, 1914.

"Mr. Francis Speir,
"President, Joint Trunk Sewer Com.,
"52 Wall Street, N. Y.:

"Dear Sir:—We are enclosing copy of a letter sent to Mr. Edmund R. Halsey, Township Engineer, South Orange Township, relating to this Board's attitude in reference to the Joint Outlet Sewer.

"Very truly yours,

"R. B. Fitz Randolph,
"Chief."

"May 21, 1914.

"Mr. Edmund R. Halsey,
"164 Market Street,
"Newark, N. J.:

"Dear Sir:—In reply to your letter of May 20th, inquiring as to the action of this Board in reference to the sewer extensions in South Orange Township, we will supply you with the following facts:

"For some time past it has been reported to us that the Joint Outlet Sewer used by South Orange, Summit and other municipalities in that section was not large enough to satisfactorily

care for the sewage flow during rainy periods. For this reason sewage has overflowed from the manholes; in some cases tending to pollute the water supplies of both Rahway and Elizabeth.

"Upon your plans being presented for the purpose of augmenting the quantity of sewage to be discharged into this trunk sewer, it was considered advisable to make an investigation as to the truthfulness of these statements, and as to the importance of the pollution.

"We expect to have a report on this matter within the next few days, and definite action upon the sewer investigations will probably be taken on Tuesday next.

"Very truly yours,

"R. B. Fitz Randolph,

"Chief."

Mr. Speir and Mr. Potter talked on this subject at some length and a motion was made that a committee be appointed by the Chair to attend the next meeting of the Board of Health. The Chairman appointed Messrs. Knight, Kraemer and Kenney, as a committee, to be accompanied by the Chairman and Engineer.

The following communication from the Treasurer was read and ordered placed on file:

"Phoenicia, N. Y., June 16, 1914.

"Arthur Tepper, Esq.,

"Secretary, Joint Meeting Com.:

"Dear Sir:—Under doctor's orders I am resting up after more or less serious illness. Immediately on my return, I will file financial statement with you as Secretary, and if desired send enough copies of same so that one may be sent to each municipality. Regretting my unavoidable absence from meeting, I remain,

"Yours truly,

"Simeon H. Rollinson."

The following bills were read, approved and ordered paid, a vote by roll call resulting, 6 ayes, no noes:

Corey W. Sandford, May salary and horse..	$170.00
John J. Keating, May salary	100.00
Arthur Tepper, May salary and office	35.16
Arthur Tepper, petty cash account	13.00
Summit Herald	22.00
N. Y. Telephone Co.	7.00
Gilbert Smith	20.00
Francis Speir	15.00
E. S. Allen	10.00
Frank R. Sharp	15.00
E. L. Smithers	15.00
John J. Kenney	15.00
J. G. D. Knight	15.00
Chas. F. Kraemer	15.00
F. J. Lovatt	5.00
H. J. Stanley	5.00
S. H. Rollinson	62.50
Corey W. Sandford, expense	24.80
Arthur Tepper, postage, etc.	8.04
Arthur Tepper, petty cash	46.00

The following resolution was offered and unanimously adopted, a vote by roll call resulting, 6 ayes, no noes:

"Resolved, That the several municipalities do raise and pay to the Treasurer of the Joint Meeting the sum of $1,750.00, which shall be assessed upon the joint municipalities in the proportion fixed by the contract between the several municipalities, as provided for the care and maintenance of the Joint Sewer, i. e., each municipality paying an equal amount or one-seventh of such assessment (excepting the City of Newark, which shall pay two-sevenths, or one-seventh for Newark and one-seventh for Vailsburg), and further, that the Secretary be directed to notify the various municipalities of such assessment and the proportion to be paid by each; and be it further

"Resolved, That the said moneys be paid to the Treasurer of the Joint Meeting within twenty days of the 1st day of July.

"This is the assessment for the 2nd quarter of 1914."

The apportionment of the maintenance cost of the Joint Trunk Sewer, reported upon at the last meeting, was then considered, Gen. Knight proposing that *the administrative expense* be apportioned according to the *allotted capacity* of each municipality, and the *operating expense,* according to the *use made of the Joint Trunk Sewer,* i. e., according to the average daily

contributing flow to the sewer by the various municipalities, determined at the close of each year.

Municipalities would contribute to both expense accounts quarterly; but their contributions would be adjusted yearly, after the determination of the average daily contributing flow for the year. Mr. Potter said that this determination would not be at all difficult.

It was claimed that operating expenses should not be apportioned according to allotted capacity, since this would be unduly taxing municipalities for having made provision for needs of the distant future.

Gen. Knight urged that the method proposed be considered on its merits, that the resulting cost to each municipality be not used as an argument against a method based upon equity.

Criticism was invited, but the remarks which followed were all favorable to the method proposed.

It was then moved by Dr. Kraemer that the recommendations of Gen. Knight be concurred in and approved of, that Counsel be authorized to draw up a new contract on that basis, and that same be referred to the several municipalities for their approval. The motion was duly seconded and so ordered.

The Board then went into the election of officers for the ensuing year and the following gentlemen were unanimously elected:

Francis Speir—Chairman.
E. L. Smithers—Vice-Chairman.
S. H. Rollinson—Treasurer.
Arthur Tepper—Secretary.
Adrian Riker—Counsel.
Alexander Potter—Chief Engineer.
Corey W. Sandford—Chief Inspector.

Messrs. Kraemer, Kenney and Smithers were appointed as Auditing Committee.

The Secretary reported that owing to a death in his family, succeeded by the serious illness of the Treasurer, the books have not yet been audited.

The Secretary was authorized to arrange with Mr. C. C. Taylor, Accountant, to audit the books at the earliest opportunity.

The Engineer was instructed to arrange for the annual tour of inspection.

There being no further business, the meeting adjourned.

ARTHUR TEPPER,
Secretary.

Joint Meeting of September 24, 1914.

A meeting of the Joint Meeting was held on Thursday evening, September 24, 1914, in South Orange Village Hall.

Present: Messrs. Speir, Chairman; Stanley of Irvington, Allen of South Orange, Kenney of West Orange, Smithers of Millburn, and Gen. Knight of Summit; Newark was represented by Messrs. Denman and Rankin.

The minutes of the previous meeting were approved as printed.

The Engineer presented the following report, which was received, and on motion ordered placed on file:

"September 24, 1914.

"The Joint Meeting:

"Gentlemen:—In the absence of Mr. Potter, who is detained on professional work at Havana, Cuba, I beg to report on matters of interest to the Joint Meeting.

"During July and August, all of the manholes in Section 4 of the Joint Trunk Sewer where it runs through the water works property of the Village of South Orange, opposite the playground, have been replastered and whitewashed, and two of them have been partially rebuilt and new embankment placed around them. Ditches have also been dug to drain the surface water which collects in the neighborhood of several manholes into the nearby creek, thereby preventing it from reaching the Joint Trunk Sewer.

"During the latter part of July a serious stoppage occurred in the Irvington section of the Joint Sewer on Springfield Avenue east of the Speedway. It was found that the sewer was entirely stopped up and all of the flow overflowed from the top of the manholes, overrunning the streets. An investigation showed that the Public Service Corporation was primarily responsible for the stoppage in placing a toilet over the manhole on the Avenue for the paving gang and being negligent in going away nights and leaving the lid off the manhole. To remove the obstruction took a force of three men three days, at an actual expense to the Joint Meeting of $20.00. A bill for this amount has been rendered to

the Public Service Corporation. A copy of the letter sent to them in reference to this matter is attached to this report.

"The Inspector, Mr. Corey Sandford, has been complaining during the past month that great quantities of storm water are still entering the Joint Trunk Sewer at Lyons Avenue. The facts are that during every storm the discharge in this sewer is so great that it backs up in the manhole where the recording device is located, to a depth varying from three to five feet, which would correspond to a discharge of 1,500,000 gallons per day,—an excessive rate for the Newark section during the dry-weather season. An inspection in Newark showed that especially in Fabyan Place, between Clinton Avenue and Schley Street, nearly every house had its roof water connected to the sewer. In fact, all the better class of houses in Newark have such a connection, and this condition primarily is responsible for the enormous sewage flow at Lyons Avenue at times of storms.

"This condition is somewhat aggravated by the Castles Ice Cream Plant. At that plant there is pumped from two wells 118 gallons of water per minute, corresponding to 170,000 gallons per day. This water, which is used for condensing purposes only, is as clear and pure when it leaves the plant as when pumped from the wells, and there is no reason why it cannot be discharged into a natural water-course. Irvington has contributed $107,463 to the construction of the Joint Trunk sewer for an allotted capacity of 3,372,000 gallons, of which the Castles Ice Cream factory utilizes five per cent., or $5,400 worth. At a very small fraction of this cost, the flow from the factory could be diverted into the small stream which enters Skinkle Brook at Lyons and Union Avenues. We would recommend that this be done as this would to some extent relieve the congestion of the Joint Trunk Sewer in Irvington.

"To our knowledge, no active steps have been taken thus far by the City of Newark to discontinue the admission of roof water to the Joint Trunk Sewer, especially that section tributary to Lyons Avenue.

"On Brookdale Avenue, Newark has rebuilt the Joint Trunk Sewer in an entirely new location, made necessary by the construction of the storm sewer. Some of the manholes on the old abandoned line have sunk and settled out of place, and on one or two the covers are tilted at angles dangerous to traffic. These manhole frames and covers should be removed and the manholes filled in. The question to be determined by the Joint Meeting is whether this should be done at the expense of the Joint Meeting or at Newark's expense.

"Accompanying this report is a copy of a letter which we have received from the State Board of Health in reference to a hearing

on Joint Trunk Sewer matters to be held before that body at Trenton on October 6, 1914.

"Respectfully submitted,

"ALBIN H. BEYER,
"Principal Assistant."

"New York, August 18, 1914.

"Public Service Corporation,
"Newark, N. J.:

"Gentlemen:—The Chief Inspector of the Joint Trunk Sewer has notified us that a serious stoppage occurred during the latter part of July in the Irvington Second Section of the Joint Trunk Sewer on Springfield Avenue east of the Speedway, for which it appears that your company is responsible. The sewer was entirely stopped up and all of the flow overflowed from the top of the manhole, overrunning the streets. An investigation showed that your company was responsible for the stoppage, first, in placing a toilet over the manhole on the Avenue for the paving gang, and second, in going away nights and leaving the lid off the manhole cover. The children threw sticks and various other things into the sewer, which became lodged there. The stoppage was made complete by the large quantity of cotton waste coming down the sewer at this point, which it appears is thrown in the sewer at the car barn.

"This is not the first time that stoppages have occurred in the sewer due to the fact that your field men have erected toilets over manholes, and foreign matter has reached the sewer through these openings. In one instance I remember we removed several lanterns which had become lodged in the sewer. If stoppages occur again as they have heretofore, the Joint Meeting will be compelled to withdraw the contract giving your company the right to use the sewer for toilet purposes.

"To remove the obstruction in the present instance, it required our force of men three days at an actual expense to the Joint Meeting of $20.00. A bill for this amount is enclosed, to which we ask you to give your prompt attention.

"Yours very truly,

"ALEXANDER POTTER,
"Per Albin H. Beyer,
"Principal Assistant."

BOARD OF HEALTH
OF THE STATE OF NEW JERSEY.

"Trenton, September 14, 1914.

"Executive Office.

"Mr. Alexander Potter, C. E.,
"50 Church Street, New York City:

"Dear Sir:—At a meeting of the Board of Health of the State of New Jersey, held September 8, 1914, motion was made and carried that representatives of the Joint Trunk Sewer Committee and of the various municipalities from which sewage is discharged into the Joint Trunk Sewer, be notified to appear before this Board at 11 a. m., Tuesday, October 6, 1914, for a conference in regard to the discharge of sewage into said Joint Trunk Sewer.

"It is very necessary that an agreement be reached between the representatives of the Joint Trunk Sewer and the municipalities above referred to in order to prevent the further pollution of the waters of this State by the overflow of sewage from the Joint Trunk Sewer above mentioned in times of storm.

"Very respectfully,

"JACOB C. PRICE,
"Secretary."

Regarding the admission of storm water through roof connections with the sewer, Mr. Allen made a motion that the City of Newark be notified as follows, seconded and so ordered:

"Your attention is called to the fact as reported by the Engineer of the Joint Trunk Sewer, that with every rainfall, the proportion of flow into the sewer belonging to the City of Newark is excessive, causing a surcharge of the Main Outlet Sewer.

"This condition is caused chiefly by the practice in certain streets, among which is Fabyan Place, between Clinton Avenue and Schley Street, of connecting house leaders with the sewer, thereby introducing storm water in large quantities, which the sewer is not designed nor intended to contain. The overflow of the Lyons Avenue sewer for which the management of the Joint Sewer has been called before the State Board of Health, arises largely from this practice.

"It is the request of the Joint Sewer Meeting that steps be taken by your municipality to remove the cause of this overflow, by prohibiting the connection of further leaders, and discontinue those now in effect at the earliest practicable day."

Regarding that portion of the report which refers to the condition of manholes on the abandoned line on Brookdale Avenue, Gen. Knight recommended that the City of Newark be advised that the filling in of these manholes is essentially a part of the

scheme of substitution by the new sewer of the old one, and should therefore be attended to by the City of Newark as promptly as possible. So ordered.

The Treasurer submitted the following report, which was accepted and ordered placed on file:

"To the Various Municipalities Comprising the Joint Sewer Meeting:

"Gentlemen:—The Treasurer respectfully reports, that on the twenty-sixth day of February, Nineteen Hundred and Fourteen, the date of his last report, he had on deposit in the Orange National Bank the sum of Eight Hundred and Thirty-five Dollars and Seventy-six Cents ($835.76), with four warrants outstanding, to wit: Warrants Nos. 2,017, 2,064 and 2,066 for $2.50, $83.33, $170.00 and $100.00, respectively, so that the total amount of cash on hand at that time was the sum of Four Hundred and Seventy-nine Dollars and Ninety-three Cents ($479.93).

"The Treasurer respectfully reports that since the date of his last report he has deposited in the Orange National Bank money received from various sources, as shown on Schedule No. 1, hereunto annexed, the sum of Three Thousand Seven Hundred and Fifty Dollars ($3,750.00), and has received credit for Three Dollars and Seventy-nine Cents ($3.79) interest due on March Thirty-first, Nineteen Hundred and Fourteen, so that with the balance above referred to he had cash on hand to the amount of Four Thousand Two Hundred and Thirty-three Dollars and Seventy-two Cents ($4,233.72).

"The Treasurer further reports that he has signed warrants, as shown on Schedule 2, hereunto annexed, amounting to Two Thousand Nine Hundred and Twenty-nine Dollars and Sixty-four Cents ($2,929.64), so that the total amount of cash on hand at the date of this report is the sum of One Thousand Three Hundred and Four Dollars and Eight Cents ($1,304.08). Warrant No. 2,017 for Two Dollars and Fifty Cents ($2.50) is still outstanding, so that the Treasurer now has on deposit in the Orange National Bank the sum of One Thousand Three Hundred and Six Dollars and Fifty-eight Cents ($1,306.58).

"All of which is respectfully submitted this Twenty-fourth day of September, Nineteen Hundred and Fourteen.

"Simeon H. Rollinson,
"Treasurer."

SCHEDULE No. 1.

1914.		
Feb. 26	Balance	$ 479.93
" 23	South Orange	250.00
Mar. 31	Millburn	250.00
Apr. 1	Irvington	250.00
" 8	West Orange	250.00
" 8	Summit	250.00
" 20	South Orange	250.00
July 2	Irvington	250.00
" 11	Summit	250.00
" 18	Newark (two assessments)	1,000.00
" 24	South Orange	250.00
" 30	Millburn	250.00
" 30	West Orange	250.00
	Interest (March 31, 1914)	3.79
	Total	$4,233.72

SCHEDULE No. 2.

1914.		
Feb. 27	N. Y. Telephone Co.	$ 19.80
" 27	Summit Herald	12.00
" 27	Corey W. Sandford	3.50
" 27	John J. Keating	1.60
Mar. 10	James P. Hall, Inc.	100.00
" 31	Alexander Potter	83.33
" 31	Corey W. Sandford	170.00
" 31	John J. Keating	100.00
" 31	Arthur Tepper	35.16
Apr. 30	Alexander Potter	83.33
" 30	Corey W. Sandford	170.00
" 30	John J. Keating	100.00
" 30	Arthur Tepper	35.16
May 5	Arthur Tepper	13.00
" 8	N. Y. Telephone Co.	20.35
" 8	Matthias Plum	13.50
" 8	Summit Herald	12.00
" 8	S. H. Rollinson	62.50
" 8	John J. Keating	1.10
" 29	Alexander Potter	83.33
" 29	Corey W. Sandford	170.00
" 29	John J. Keating	100.00
" 21	Arthur Tepper	35.16
June 19	Summit Herald	22.00
" 19	N. Y. Telephone Co.	7.00
" 19	Gilbert Smith	20.00
" 19	Francis Speir	15.00

"	19	E. S. Allen	10.00
"	19	Frank R. Sharp	15.00
"	19	E. L. Smithers	15.00
"	19	John J. Kenney	15.00
"	19	J. G. D. Knight	15.00
"	19	Charles F. Kraemer	15.00
"	19	T. J. Lovatt	5.00
"	19	Harry J. Stanley	5.00
"	19	S. H. Rollinson	62.50
"	19	Corey W. Sandford	24.80
"	19	Arthur Tepper	8.04
"	30	Arthur Tepper	46.00
"	30	Alexander Potter	83.33
"	30	Corey W. Sandford	170.00
"	30	John J. Keating	100.00
"	30	Arthur Tepper	35.16
July	31	Alexander Potter	83.33
"	31	Corey W. Sandford	170.00
"	31	John J. Keating	100.00
"	31	Arthur Tepper	35.16
Aug.	6	Arthur Tepper	39.00
"	31	Alexander Potter	83.34
"	31	Corey W. Sandford	170.00
"	31	John J. Keating	100.00
"	21	Arthur Tepper	35.16
		Total	$2,929.64

Mr. Speir presented the following correspondence with the State Board of Health:

"Trenton, August 29, 1914.

"Mr. Francis Speir,
"52 Wall Street,
"New York City:

"Dear Sir:—A question has arisen as to whether or not it is proper for this Board to withhold their approval of certain sewers which the Township of South Orange proposes to construct in the near future.

"As soon as these plans were submitted, we informed Mr. Potter of the fact, and received from him a communication, a copy of which is enclosed herewith. This reply very naturally resulted in the Board not taking any definite action with relation to the proposed South Orange Township sewers. The officials of South Orange Township, Mr. F. O. Runyon and Mr. Halsey, their Engineer, claim that this action of Mr. Potter's is unwarranted.

"Briefly, the contention of these gentlemen is that the Township of South Orange has acquired rights in the Joint Trunk

Sewer from Millburn, Newark and the Village of South Orange. They claim that they have not exceeded the allotted or purchased capacities in any one of these cases, that is, that the total flow of South Orange Township is less than any of the several privileges which they have purchased from other municipalities. They also intimate that Mr. Potter is acting without proper authority in this matter, and is not acting in accordance with the general attitude of the Joint Sewer Committee, and they insist also that they have no direct relations with the Joint Sewer Committee, only having relations with those municipalities from whom they have purchased certain rights in the Joint Trunk Sewer.

"They also contend that the need for the sewers is urgent. In one case, the Academy Street sewer is to be constructed for the purpose of taking sewage from a newly constructed schoolhouse which has been constructed jointly by the Village and Township of South Orange. The Board, appreciating the necessity for proper drainage from a schoolhouse, has granted the Township of South Orange permission to construct this short sewer on Academy Street.

"With relation to the general aspect of the case, our inspector states that there was apparently some apprehension in Mr. Potter's office that South Orange Township was exceeding the flow of sewage to which they have any proper rights, and we believe that this was Mr. Potter's reason for requesting that the proposed extensions be held until an investigation of this matter could be made.

"We are taking the matter up with you to ascertain specifically whether or not Mr. Potter has exceeded his authority in making this request, and whether or not the Joint Sewer Committee are opposed to the making of these extensions.

"Very truly yours,

"R. B. Fitz Randolph,

"Chief."

"Havana, Cuba, August 5th, 1914.

"Dr. R. B. Fitz Randolph,

"Chief, Division of Food, Drugs, Sewerage and Water,

"State Board of Health,

"Trenton, N. J.:

"Dear Sir:—Answering your letter of July 31st, in reference to sewer extensions in South Orange Township:

"Until some definite knowledge is obtained concerning the present contributary flow from South Orange Township, it would be a mistake to waive the edict already given against the construction of additional sewers in the Joint Trunk Sewer system, for if South Orange Township is already exceeding its quota, that in itself should serve as an estoppel to further extensions, and if added to this, extensions to the sewers by those who built

and paid for the Joint Trunk Sewer system originally are denied, it would be manifestly improper to favor a town who has secured rights only through the courtesy of others. An examination of the South Orange Township sewers will be made by us as early as conditions will warrant the securing of adequate information as to its flow at maximum periods.

"Specifically answering your question, the Joint Trunk Sewer has passed a rule that no extensions can be made to the Joint Trunk Sewer without first securing its consent to such construction. The securing the consent of the State Board of Health might be construed as superior to the consent of the Joint Trunk Sewer Commission, and therefore I am of the opinion that the State Board of Health should not act until the Joint Trunk Sewer Commission has given its permission to the extensions in question.

"Yours very truly,

"Alexander Potter."

"September 14, 1914.

"R. B. Fitz Randolph, Esq.,
Chief, Division Food, Drugs, Sewer and Water,
"Board of Health, State of New Jersey,
"Trenton, New Jersey:

"Dear Sir:—On my return from my vacation, I have your favor of August 29th, in relation to the approval of certain sewers which the Township of South Orange proposes to construct.

"I have since talked with Mr. E. R. Halsey, the engineer of the Township of South Orange, and told him that the Joint Body would not interfere in the slightest degree with the construction of the sewers and should facilitate them in every way.

"We expect a meeting of the Joint Body to be held the latter part of September and appropriate action can then be taken.

"Our Counsel, Mr. Adrian Riker, has advised us that the quota of space in the Joint Trunk Sewer, as fixed in the contract between the contracting parties, belongs to each of them without restriction on the part of the Joint Body and that each has the right to sell or otherwise dispose of any part of its quota without interference on the part of the Joint Body.

"I have inquired from Mr. Potter's office and learn that Mr. Potter is away, and Mr. Beyer, his assistant, did not seem to know of the sales and leases that had been made by the members of the Joint Body. The Joint Body should not oppose the making of these extensions.

"Very truly yours,

"Francis Speir."

A motion was made that State Board of Health be requested to postpone, if possible, the hearing set for October 6th, for at least one week. So ordered.

The following letters were read:

"Irvington, N. J., August 27th, 1914.

"Mr. Arthur Tepper,

"Secretary Joint Sewer Commission,

"Summit, N. J.:

"Dear Sir:—The sewers in Augusta Street, Lincoln Place and other sections along the line of the Joint Sewer, have become unbearable.

"Will ask that we have another conference at an early date with your Commission, in order to discuss means of getting rid of this nuisance.

"As you are no doubt fully aware that nothing has been done, we are of the opinion that something should be, to relieve those people living along the line of this sewer.

"Awaiting your reply, we are,

"Yours very truly,

"Bureau of Health,

"Irvington, N. J.

"Joseph K. Clickenger,

"Inspector."

"Irvington, N. J., September 18th, 1914.

"My Dear Mr. Speir:

"Yours of the 14th inst. at hand, and would state that I am very much pleased with the contents and will gladly give the Joint Trunk Sewer Commission the permission, with the consent of the property holders along Augusta Street and Lincoln Place, to experiment by removing the interception traps. Will also state that since being Commissioner, have had an Ordinance passed prohibiting the use of these traps.

"Thanking you and hoping you can see your way clear to start this experiment at once, I am,

"Yours very truly,

"David H. Greene.

"P. S.—I would ask that Mr. Sandford confer with Mr. Clickenger as the work progresses in order that we may know each detail.—(G.)"

It was moved, that as the Irvington Board of Health has removed its objections, the Engineer be directed to proceed with his experiments for ventilating the Irvington sewers at once.

The following resolution was introduced and on being put to vote by roll call, was carried. Six ayes, no noes:

"Resolved, That the several municipalities do raise and pay to the Treasurer of the Joint Meeting the sum of $1,750.00, which shall be assessed upon the joint municipalities in the proportion fixed by the contract between the several municipalities as pro-

vided for the care and maintenance of the Joint Sewer, i. e., each municipality paying an equal amount or one-seventh of such assessment (excepting the City of Newark, which shall pay two-sevenths, or one-seventh for Newark and one-seventh for Vailsburg), and further, that the Secretary be directed to notify the various municipalities of such assessment and the proportion to be paid by each; and be it further

"Resolved, That the said moneys be paid to the Treasurer of the Joint Meeting within twenty days of the 1st day of October, 1914.

"This is the assessment of the 3rd quarter of 1914."

The following bills were read, approved and ordered paid, vote by roll call resulting, six ayes and no noes:

Alexander Potter, May salary	$ 83.33
Alexander Potter, June salary	83.33
Corey W. Sandford, June salary and horse	170.00
J. J. Keating, June salary	100.00
Arthur Tepper, June salary and office	35.16
Alexander Potter, July salary	83.33
Corey W. Sandford, July salary and horse	170.00
J. J. Keating, July salary	100.00
Arthur Tepper, July salary and office	35.16
Alexander Potter, August salary	83.33
Corey W. Sandford, August salary and horse	170.00
J. J. Keating, September salary	100.00
Arthur Tepper, August salary and office	35.16
Alexander Potter, September salary	83.33
Corey W. Sandford, September salary and horse	170.00
J. J. Keating, September salary	100.00
Arthur Tepper, petty cash	39.00
Arthur Tepper, petty cash	18.00
Herbert S. Fish	3.00
Summit Herald	6.00
Adrian Riker	250.00
S. H. Rollinson	62.50
J. J. Keating (expense account)	2.95
N. Y. Telephone Co.	20.00

On motion the meeting adjourned.

ARTHUR TEPPER,
Secretary.

Joint Meeting of December 30, 1914.

A meeting of the Joint Meeting was held in South Orange Village Hall on Wednesday evening, December 30th, 1914.

Present: Chairman Francis Speir; Messrs. Kraemer, of Newark; Stanley, of Irvington; Kenney of West Orange; Allen, of South Orange; Smithers, of Millburn, and Gen. Knight, of Summit. Messrs. Denman and Rankin, of Newark, were also present.

The minutes of the last meeting were, on motion, approved as printed.

The Engineer presented the following report, which was accepted and ordered placed on the minutes:

"December 30, 1914.

"Joint Meeting:

"Gentlemen:—I am pleased to report that the efforts of the Joint Meeting to relieve the unsanitary situation in certain streets of Irvington due to odors given off from the Joint Trunk Sewers in Irvington have been crowned with success.

"This whole matter of the ventilation of sewers in Irvington is one of extreme importance from an engineering standpoint and the information obtained in Irvington will prove of value to many cities throughout the country. I am, therefore, preparing for the Joint Meeting a complete report covering this entire matter from a scientific standpoint, which will be submitted as an interim report.

"In the meantime, I beg to report that the entire expense so far in connection with this matter has been $173.50, and I would recommend that the balance of the appropriation of $250.00 be reserved to give your Engineer an opportunity to extend the work to other parts of Irvington.

"I delegated an assistant engineer to spend several days with the Inspector going over the streets affected by these improvements, and he found that the draft into the sewers along Augusta Street and Lincoln Place was so great that when a newspaper was lighted over the manholes the flames were drawn into the sewer two or three inches, indicating a perfect state of circulation.

"Contrary to the expectations of those who have been opposed to the removal of the house traps for so long a time, these improvements have not caused the transfer of the unsanitary conditions from one point to another, for the odors originally noticed on these streets are nowhere in evidence in or about the houses where traps have been removed.

"I cannot close this report without acknowledging the services of Mr. Joseph Clickenger, Health Officer of Irvington,

who for so long a time honestly opposed the eradication of the house traps, through whose efforts property owners have given consent to the removal of their traps which it would have been otherwise difficult to secure.

"Mr. Corey Sandford, our Inspector, also deserves credit for the persistence with which he has followed up the securing of these permits.

"Ordinarily, and in any other town, this matter would pass unnoticed, but so great a feeling had been worked up in Irvington against the omission of the house traps that the persons giving their consent did so with the feeling that probably they were taking a considerable risk; consequently, credit is due to those who have assisted us in this matter.

"One of the principal reasons for the decided objection raised against the elimination of the house traps was the fact that many of the cellars were drained through these traps and it was assumed that the elimination of the house trap would either prevent or seriously interfere with this use of the sewer. A plan was prepared by your Engineer which enabled those persons using the sewer for this purpose to continue to do so without in any way creating unsanitary conditions in their homes.

"In the Town of Irvington, a new street, Chancellor Avenue, is being constructed which will put a fill over the Joint Trunk Sewer of some 10 or 15 feet. I would recommend the construction of a new drop manhole in the sewer at this street before this filling is done for such a manhole will be needed to connect the lateral sewers, and it can be done better now without injuring the Joint Trunk Sewer than after the fill has been made.

"Another change in the position of the Elizabeth River will necessitate the reinforcing of a short section of the sewer through the old Day property below Stuyvesant Avenue, but the construction of this work can safely be left until spring.

"The exposed iron pipes across the Elizabethtown Water Company's property and across the Elizabeth River require painting, but we have made an examination of these pipes and find that this painting can safely be left until spring.

"Respectfully submitted,

"Alexander Potter."

The recommendations were taken up seriatim, with the result that the recommendation for manhole in the new street was concurred in, as was that regarding reinforcing of sewer below Stuyvesant Avenue when conditions are favorable.

The Engineer was authorized to get bids for painting the exposed iron pipe section.

The following communication was received from the Town of Irvington. On motion it was ordered printed in the minutes:

"Irvington, N. J., December 28, 1914.

"Mr. Harry J. Stanley,

"Commissioner of Streets and Public Improvements:

"Dear Sir:—As you are the representative of the Joint Trunk Sewer, I submit the following report concerning the work along the Augusta Street, Lyons Avenue, Lincoln Place and Springfield Avenue sewers:

"Through the courtesy of our plumbing inspector, Mr. J. Sonnenberg, plans were drawn showing the work to be done: The trap as it existed, removal of trap and placing of cellar drain. We were fortunate in securing a low figure for the work, which helped us to accomplish much more than was anticipated. With the co-operation of the Joint Sewer representative, Mr. Corey Sandford and the local Bureau of Health, after much effort were able to secure the signatures of the property owners along the following streets:

"Augusta Street-Lyons Avenue.—Caroline Schweikart, 1058 Clinton Avenue; Fred J. Howard, 239 Cottage Street; Mrs. John Kent, 28 Augusta Street; Mrs. M. G. Farry, 22 Augusta Street; Fred Kraft, 31 Augusta Street; I. D. Berntheisen, 32 Augusta Street; Chas. Wolber, 68 Augusta Street; Ernest Scott, 90 Augusta Street; August Lacombe, 306 Lyons Avenue; Hugo R. Winkler, 328-332 Lyons Avenue.

"Lincoln Place-Springfield Avenue.—German Lutheran Church, 23 Lincoln Place, Peter Earnest, trustee (parsonage); John Weber, 43 Lincoln Place; Otto Mohler, H. M. Lehman, joint owners, 53 Lincoln Place; N. Weber, 79 Lincoln Place; Mrs. E. C. Stalb, 1097 Springfield Avenue; H. Lillian, 1075-77 Springfield Avenue.

"The plumbing inspector, Mr. J. Sonnenberg, reports he has examined same and finds them exceptionally well done. I believe there is still an unexpended balance and would suggest that this be held until springtime, so we can see where this can be best expended.

"Respectfully submitted,

"Bureau of Health,
"David H. Greene,
"Commissioner.

"Joseph K. Clickenger,
"Inspector."

The following report from the Treasurer was accepted and ordered printed in the minutes:

"December 30th, 1914.

"To the Various Municipalities Comprising the Joint Sewer Meeting:

"Gentlemen:—The Treasurer respectfully reports that on the twenty-fourth day of September, nineteen hundred and fourteen, the date of his last report, he had on deposit in the Orange National Bank the sum of one thousand three hundred and six dollars and fifty-eight cents ($1,306.58), with one warrant for two dollars and fifty cents ($2.50) outstanding, so that the total amount of cash on hand at that time was one thousand three hundred and four dollars and eight cents ($1,304.08).

"The Treasurer further reports that since the date of his last report he has deposited in the Orange National Bank money received from various sources, as shown on Schedule 1, hereunto annexed, the sum of seventeen hundred and fifty dollars ($1,750), and has received credit for four dollars and thirty-four cents ($4.34) interest, so that with the balance above referred to he has cash on hand to the amount of three thousand and fifty-eight dollars and forty-two cents ($3,058.42).

"The Treasurer further reports that since the date of his said report he has signed warrants, as shown on Schedule 2, hereunto annexed, amounting to nineteen hundred and sixty-two dollars and eighty-two cents ($1,962.82), so that the total amount of cash on hand on the date of this report is one thousand and ninety-five dollars and sixty cents ($1,095.60). Warrant No. 2017, for two dollars and fifty cents ($2.50), is still outstanding, as also are warrants 2125, for three dollars ($3); 2141 for one hundred and seventy dollars ($170), and 2142 for one hundred dollars ($100), so that he now has on deposit in the Orange National Bank the sum of thirteen hundred and seventy-one dollars and ten cents ($1,371.10), with said warrants outstanding.

"All of which is respectfully submitted this twenty-fourth day of December, nineteen hundred and fourteen.

"Simeon H. Rollinson,
"Treasurer."

1914.				
		Balance	$1,304.08	
Oct.	16	West Orange	250.00	
"	17	Irvington	250.00	
"	19	South Orange	250.00	
"	21	Summit	250.00	
"	26	Millburn	250.00	
"	21	Newark	500.00	
		Interest	4.34	
				$3,058.42

Disbursements.

1914.				
Sept.	18	Arthur Tepper	$ 18.00	
"	30	Alexander Potter	83.33	
"	30	Corey W. Sandford	170.00	
"	30	John J. Keating	100.00	
"	30	Arthur Tepper	70.32	
"	30	H. S. Fish	3.00	
"	24	N. Y. Tel. Co.	20.00	
"	24	Summit Herald	6.00	
"	24	Adrian Riker	250.00	
"	24	S. H. Rollinson	62.50	
"	24	John J. Keating	2.95	
"	24	Corey W. Sandford	12.38	
Oct.	31	Alexander Potter	83.34	
"	31	Corey W. Sandford	170.00	
"	29	John J. Keating	100.00	
"	29	Arthur Tepper	34.00	
Nov.	30	Alexander Potter	83.33	
"	30	Corey W. Sandford	170.00	
"	30	John J. Keating	100.00	
"	30	Arthur Tepper	35.16	
Dec.	21	Alexander Potter	83.34	
"	21	Corey W. Sandford	170.00	
"	21	John J. Keating	100.00	
"	21	Arthur Tepper	35.17	
				1,962.82
		Cash on hand		$1,095.60

The following letter and form of contract were received from Mr. Riker:

"November 6, 1914.

"Mr. Arthur Tepper,
"Millburn, N. J.:

"Dear Sir:—I have prepared the enclosed supplemental contract providing for the payment of the cost of maintenance of the sewer, beginning with the next fiscal year.

"It is ready to be submitted to the Joint Meeting when they next hold their meeting.

"Yours very truly,

"Adrian Riker."

"Supplemental Joint Contract made this thirty-first day of December, 1914, by and between the Township of Millburn, in the County of Essex, the Mayor and Common Council of the City of Newark, the City of Summit, the Town of Irvington, the Town of West Orange and the Village of South Orange,

all municipal corporations of the State of New Jersey, Witnesseth:

"Whereas, The above named municipal corporations entered into a joint contract in writing, bearing date the fifteenth day of March, nineteen hundred and one, pursuant to the provisions of an act of the Legislature of the State of New Jersey, entitled 'An Act to authorize two or more municipalities in this State to jointly construct and maintain outlet or trunk sewers,' approved the fifteenth day of March, eighteen hundred and ninety-nine (Pamphlet Laws 1899, page 48); and

"Whereas, In and by the said contract above referred to it is provided as follows:

"'Section 6. The total cost and expense of the repair, rebuilding, operation, maintenance and cleaning of the said main trunk and branch or outlet sewers and appurtenances during the first three years after the date of completion and formal acceptance of the work by the "Joint Meeting" composed of the representatives of the contracting municipalities provided for in said Act of March 15th, 1899, and until otherwise agreed upon, shall be equally divided and paid by the said contracting municipalities, and after the expiration of said period, said total cost and expense may be divided and paid by said municipalities respectively, as may be jointly agreed upon.'

"And Whereas, It is desired to divide, apportion and pay the total cost and expense of the repair, rebuilding, operation, maintenance and cleaning of the said main trunk and branch or outlet sewers, as hereinafter provided:

"Now Therefore, In pursuance of a resolution duly passed by and on behalf of each of the municipalities parties hereto, it is hereby covenanted and agreed by and between the said 'the Township of Millburn, in the County of Essex, the Mayor and Common Council of the City of Newark, the City of Summit, the Town of Irvington, the Town of West Orange and the Village of South Orange,' their and each of their successors, as follows:

"1. From and after January 1, 1915, the total cost and expense of the administration of the Joint Sewer, including therein compensation to the Executive Committee, the Auditor, Secretary and Treasurer, and the retainer of Counsel, shall be apportioned and paid in accordance with the proportion of the capacity of the several municipalities in the main trunk and branch or outlet sewer; and the total cost and expense of the operation of the Joint Trunk Sewer, exclusive of the administration expenses above enumerated, shall be divided and paid in accordance with the use made annually by each of the municipalities, as determined by the discharge of sewage from each of said municipalities during each year.

"2. Each of the municipalities parties hereto shall contribute quarterly, in advance, an equal amount in cash toward the estimated total expense of operation of the sewers during the then fiscal year, as determined by the budget, which contribution shall be subject to adjustment at the end of each year upon the basis above provided, and after the determination of the average contributing flow of each of the municipalities for the year.

"3. In case it shall become necessary at any time hereafter to rebuild or reconstruct any part of the main trunk sewer or any of the branch or outlet sewers, and in case the cost of such rebuilding or reconstruction shall exceed the sum of five hundred dollars, said cost of such rebuilding or reconstruction shall be paid by the municipalities parties hereto in the proportion of the contributions of said municipalities or their predecessors to the original cost of the construction of the part so rebuilt or reconstructed.

"In Witness Whereof, The said parties hereto have hereunto caused their respective corporate seals to be hereto attached and these presents to be signed by their respective officers thereto duly authorized the day and year first above written."

A motion was made that the form of contract be approved, and that it be referred to the various municipalities, with the recommendation of the Joint Meeting. So ordered.

The following resolution was offered, seconded, and on a vote by roll call was adopted, 6 ayes, no noes:

"Resolved, That the several municipalities do raise and pay to the Treasurer of the Joint Meeting the sum of $1,750.00, which shall be assessed upon the joint municipalities in the proportion fixed by the contract between the several municipalities as provided for the care and maintenance of the Joint Sewer, i. e., each municipality paying an equal amount or one-seventh of such assessment (excepting the City of Newark, which shall pay two-sevenths, or one-seventh for Newark and one-seventh for Vailsburg), and further, that the Secretary be directed to notify the various municipalities of such assessment and the proportion to be paid by each; and be it further

"Resolved, That the said moneys be paid to the Treasurer of the Joint Meeting within twenty days of the 30th day of December, 1914.

"This is the assessment for the fourth quarter of 1914."

The following bills were read, approved and ordered paid, a vote by roll call resulting, 6 ayes, no noes:

Arthur Tepper, September and October salary	$ 70.32
Alexander Potter, October salary	83.34
Corey W. Sandford, October salary	170.00
John J. Keating, October salary	100.00
Arthur Tepper, petty cash	34.00
Alexander Potter, November salary	83.33
Corey W. Sandford, November salary	170.00
John J. Keating, November salary	100.00
Arthur Tepper, November salary	35.16
Alexander Potter, December salary	83.34
Corey W. Sandford, December salary	170.00
John J. Keating, December salary	100.00
Arthur Tepper, December salary	35.17
N. Y. Telephone Co.	20.45
American Surety Co. of N. Y.	20.00
Stanley A. Miller	173.50
Summit Herald	18.00
S. H. Rollinson	62.50
Francis Speir	25.00
C. F. Kraemer	25.00
H. J. Stanley	20.00
E. S. Allen	15.00
J. J. Kenney	20.00
E. L. Smithers	15.00
J. G. D. Knight	25.00

Mr. Rankin said that he had investigated the discharge from the Castle's Ice Cream Co. and found that connection with the sewer had been authorized by Irvington, therefore the flow should be charged against that municipality, in which it originated. Mr. Rankin had written to Irvington asking that they give the matter their consideration. He also had written to Mr. Alexander Potter asking that the flow (which filled an eight-inch pipe) be measured.

Mr. Potter said that the flow was of clear and pure water, which should be carried on the surface when the capacity of the sewer was taxed in time of storm; it might well go into a neighboring creek. Regarding the quantity of flow, although the eight-inch pipe was full, the discharge was less than might be inferred from this as the grade was very flat.

Mr. Rankin stated that about fifty notices, to terminate the connection of roofs with the sewers, had been sent out. About twelve parties had replied, four or five denying the

charge and a like number stating that condition had been remedied. A further examination will be made.

Mr. Rankin informed the Joint Body that the sewer on South Orange Avenue had been rebuilt from Halstead Street to a point about 100 feet west of Sanford Avenue.

Mr. Smithers introduced a resolution, which was adopted, directing that the various municipalities be advised that about seven thousand dollars will be needed to pay the current expenses for the year 1915, one-seventh to be contributed by each municipality, save Newark, and two-sevenths by it. Adjustment to be made at the end of the year, should a new distribution of maintenance expense be adopted.

On motion the meeting adjourned.

ARTHUR TEPPER,
Secretary.

Joint Meeting of March 11, 1915.

A meeting of the Joint Meeting was held in South Orange Village Hall on Thursday evening, March 11th, 1915.

Present: Francis Speir, Chairman; Messrs. Denman of Newark, Stanley of Irvington, Allen of South Orange, Kenney of West Orange, and Smithers of Millburn.

Messrs. Rankin of Newark, Casey of Irvington and Byrd of Millburn were also present.

The minutes of the last meeting were approved as printed.

The following report was presented by the Engineer, and was ordered printed in the minutes:

"March 11, 1915.

"To the Joint Meeting:

"Gentlemen:—In the absence of Mr. Potter on a professional engagement in Cuba, I submit herewith the annual report upon the contributing flow of the various municipalities to the Joint Trunk Sewer for the past year, together with a report upon other matters of interest to the Joint Meeting.

"The contributing flows from the various municipalities are tabulated in accordance with the arrangement adopted in previous years, giving both the average daily contributing flow for the year and the average daily contributing flow for the week of maximum flow:

TABLE 1.

AVERAGE DAILY CONTRIBUTING FLOW TO THE JOINT TRUNK SEWER BY THE VARIOUS MUNICIPALITIES FOR YEAR 1914.

(Expressed in thousands of gallons.)

	Newark.	Irvington.	So. Orange.	W. Orange.	Summit.	Millburn.	Total.
Daily flow	2,889	2,266	1,050	2,230	1,265	842	10,542
Allotted capacity ...	4,263	3,373	3,421	3,528	4,227	2,188	21,000
% of capacity used in 1914	67.8	67.3	30.7	63.2	29.9	38.4	50.3

TABLE 2.

MAXIMUM WEEKLY FLOW IN THOUSAND GALLONS PER DAY CONTRIBUTED IN 1914 TO THE JOINT TRUNK SEWER BY THE VARIOUS MUNICIPALITIES.

	Newark.	Irvington.	So. Orange.	W. Orange.	Summit.	Millburn.
Flow	5,150	3,480	2,345	3,486	2,320	2,000*
Allotted capacity ...	4,263	3,373	3,421	3,528	4,227	2,188
% of capacity used in 1914	120.8	103.1	68.5	98.8	54.9	91.5

*Estimated.

"From these tabulations it is seen that Newark is at the present time utilizing, on an average, 67.8 per cent. of its capacity, and that for one week at a time it was discharging at an average rate of 5,150,000 gallons per day, or 20.8 per cent. in excess of its capacity. Newark's flow records do not include the flow from the Newark Almshouse in South Orange Township, which now enters the Joint Trunk Sewer through the Irvington sewerage system. The amount of this flow is not known. It has been charged up by us against Irvington, as the Joint Meeting has right along assumed that it has no jurisdiction over the disposition made by a municipality of its capacity in the Joint Trunk Sewer.

"At the present time Irvington is using, on an average, 67.3 per cent. of its capacity in the Joint Trunk Sewer, and dur-

ing the past year, for a period of one week, it has exceeded its capacity by 3.1 per cent.

"South Orange Village, West Orange and Summit have not as yet exceeded for one week at a time their respective capacities in the Joint Trunk Sewer.

"Under the present arrangement of the gauges it is only possible to estimate the flow from Millburn. To accurately measure the flow from Millburn in the future is of the greatest importance to the Joint Meeting, as the cost of maintaining the Joint Trunk Sewer is to be assessed hereafter, or until otherwise provided, directly in proportion to the use made of the sewer by the various municipalities.

"The flow from the entire Wyoming district of Millburn now enters the Joint Trunk Sewer unmetered at the intersection of Millburn and Ridgewood avenues. This district comprises 6.5 miles of streets, of which about half are sewered.

"The section of South Orange Township bounded by Ridgewood Avenue on the north and by Claremont Avenue on the east drains into the Joint Trunk Sewer through the Millburn sewerage system. This latter district takes in about 4 miles of streets, of which a large portion is already sewered. None of the flow from this section, all of which is chargeable against Millburn, is now metered.

"Another very large unmetered section is the Hilton district of South Orange Township, comprising about 8 miles of streets, of which 6.3 miles are already sewered. The flow from all of this section is also chargeable to Millburn.

"To the knowledge of your Engineer, there are about 11.7 miles of sewers in Millburn and South Orange Township, the flow from which is chargeable against Millburn, but none of which is metered. The records show that the average daily flow in the Joint Trunk Sewer is about 50,000 gallons per mile of sewer. The total flow from these sections chargeable against Millburn would, therefore, be about 550,000 gallons per day. Owing to the fact that South Orange Township appears to have taken the greatest care to make its sewers as water-tight as it is possible to make them, we have assumed in the 1914 tabulations that the unmetered flow chargeable to Millburn is 350,000 gallons per day, or only about 60 per cent. of what it would be if average conditions were assumed. This assumption is eminently fair to Millburn.

"As all estimates are more or less approximate and may sometimes vary widely from the true value, your Engineer is of the opinion that the Joint Meeting should take immediate steps to see to it that suitable gauges are installed on the Millburn sewerage system so that in the future the flow therefrom will be accurately measured.

"The following complaint has been received from the Village of South Orange in regard to sewage overflowing the manholes on Meadowbrook Lane:

"'South Orange, New Jersey, Feb. 26, 1915.
"'Alexander Potter, Esq.,
"'Engineer, Joint Trunk Sewer,
"'50 Church Street, New York:

"'Dear Sir:—In behalf of South Orange, I wish to enter a protest against the conditions prevailing in that part of the Joint Trunk Sewer passing through Meadowbrook Lane in this Village. With every heavy rainfall or thaw of snow, the sewage is discharged through the overflowing manholes onto the surface of the street, creating a nuisance and a menace to health.

"'During the past week, on February 24th and 25th, the effluent has been colored almost black, indicating unmistakably the presence of dye stuffs, contrary to the regulations of the Joint Sewer Agreement.

"'Will you please take such steps, as promptly as possible, as will effect a remedy.

"'Yours truly,

"'E. S. Allen,
"'Chairman Sewer Committee.'

"The conditions referred to in the above letter have been investigated by our office force. On February 26th an investigation was made on the ground by our office. At that time the trunk sewers in West Orange were discharging under a slight head, which made it impossible to make accurate flow gaugings. None of the manholes were overflowing then. There was, however, evidence on the ground that the manholes on Meadowbrook Lane and one in West Orange had been overflowing for a short period.

"On March 9th, when the flow had somewhat subsided, accurate gaugings showed the flow from West Orange to be 3,500,000 gallons, of which amount 1,000,000 was discharged from Orange into the West Orange trunk through a 15-inch line located on Morris Avenue.

"Previous investigations show that the sewage discharged from West Orange contains at times large quantities of dye refuse and factory wastes discharged principally from five hat factories in Orange. The larger of these factories are F. Berg & Co., The Connet Co. and The No Name Company. It is estimated that in all about 90,000 gallons of such wastes are discharged daily into the West Orange trunk sewer from the Orange district tributary to it.

"Our records further show that during the past three years the carrying capacity of the West Orange trunk sewer for a

distance of about a quarter of a mile below the weir chamber has been gradually decreasing until now it is only about 78% of its original capacity, a condition not noted elsewhere in the joint trunk sewer system. Examination shows that this reduction in capacity is not due to any stoppage or settling of the sewer. In all probability, it is due to the fouling of the sides of the sewer and the accumulation of slight deposits in the bottom of the sewer, the formation of which may have been aggravated by the large quantities of hair discharged with the factory wastes from Orange, which have a tendency to cement these deposits together.

"The conditions referred to in the South Orange Village complaint exist only when West Orange is exceeding its capacity. Under normal conditions, the capacity of West Orange in the Joint Trunk Sewer, amounting to 3,528,000 gallons daily, fills the trunk at the South Orange-West Orange boundary line about two-thirds of its depth. It is only when West Orange exceeds its capacity that the overflow takes place on Meadowbrook Lane in the Village of South Orange.

"In regard to the nature and restrictions of discharge from manufactories, the Joint Meeting has adopted a number of rules and regulations, some of which might be applied in this case to secure the desired remedy for the Village of South Orange.

"In Irvington, on Augusta Street, between Cottage Street and Lyons Avenue, at times of excessive precipitation, one or two manholes of the Joint Trunk Sewer overflow in the street due to the backing up of the sewage on Lyons Avenue. It is possible to alleviate the condition of sewer overflow on Augusta Street, but only by transferring it to the Joint Trunk Sewer southeast of Lincoln Place along the Elizabeth River.

"The Town of Irvington has presented to your Engineer a plan, prepared by Mr. Casey, the Town Engineer, for such a relief Joint Trunk Sewer 15 inches in size, to be located on Lyons Avenue from Lincoln Place south to Ball Street, thence along Ball Street to May Street, thence south along May Street to Howard Street, thence northeast along Howard Street to Cottage Street, where the size is decreased from 15 inches to 12 inches, thence northeast along Howard Street to Clinton Avenue.

"The construction of such a relief sewer would double the carrying capacity of the existing Lyons Avenue trunk sewer. The present capacity of the Lyons Avenue trunk is about 3,000,000 gallons, and this amount cannot normally be exceeded unless Newark and Irvington jointly exceed their allotted capacities.

"The condition of sewage overflowing through the top of a manhole on a city street is a distinct menace to health and should not be permitted any longer than absolutely necessary.

Relief on Augusta Street can be obtained either along the lines worked out by Irvington or by doubling the carrying capacity of the Joint Trunk Sewer from Lyons Avenue to the main trunk.

"To a very great extent, the condition of surcharged sewers in Irvington can be remedied by Newark, by eliminating the roof water connections to the existing sanitary sewers as mentioned in former reports.

"Your Engineer thought it best to defer until the summertime the construction of the manhole on Chancellor Avenue authorized at the last meeting. The new fill which is now being made contains considerable quantities of frozen material, and until this has become thoroughly settled and stable, it is not safe to construct the manhole.

"The following bills are presented herewith for payment. J. B. Clow & Sons, $24.98, for furnishing three hinged covers for manhole heads; Stanley A. Miller, $9.20, for installing sanitary drain at the German Church parsonage on Lincoln Place; Queen, Gray Co., $15.00, for recording charts.

"Respectfully submitted,

"ALEXANDER POTTER,
"Per Albin H. Beyer,
"Principal Assistant."

The recommendations of Engineer's report were taken up seriatim:

Regarding Millburn Flow.—Mr. Smithers stated that if Engineer will furnish a map showing where gauges are required, same will be attended to.

Regarding Flow from Orange.—Mr. Denman moved that whereas a complaint has been made to the Joint Meeting on behalf of South Orange of an effluent flowing through the Joint Trunk Sewer that is colored almost black, indicating the presence of dye-stuffs, contrary to regulations of the Joint Trunk Sewer Agreement, that seems to be derived from the flow from West Orange;

And observations and measurements indicate a gradually decreasing capacity during the past three years until at the present time it is only about 78 per cent. of its original capacity which is apparently not due to any stoppage or settling of the sewer;

And probably this decrease in capacity is due to the fouling of the sides of the sewer and the accumulation of slight deposits in its bottom which is aggravated by large quantities of hair discharged with factory waste evidently derived from

Orange, being located at a point below the junction of the Orange connection with joint trunk main;

And also to the overflowing of the manholes on the surface of streets, following heavy rainfalls and thaws, which create a nuisance and menace to health;

It is therefore moved that West Orange be notified of this condition and urgently requested to remedy the same immediately.

This motion was seconded and so ordered, and the Secretary was directed to forward a copy of the resolution to the Town Clerk of West Orange.

Upon the suggestion of Mr. Stanley, Mr. Smithers moved that the Chairman appoint a committee to explain to Irvington's representatives the situation regarding the new contract. So ordered. The Chair appointed General Knight to serve on this committee, the Chairman to act as a member ex-officio.

The following report from the Treasurer was read, accepted and ordered printed in the minutes:

"To the Various Municipalities Comprising the Joint Sewer Meeting:

"Gentlemen:—The Treasurer respectfully reports that on the twenty-fourth day of December, nineteen hundred and fourteen, the date of his last report (several days prior to the last meeting), he had on deposit in the Orange National Bank the sum of thirteen hundred and seventy-one dollars and ten cents ($1,371.10), with warrants aggregating two hundred and seventy-five dollars and fifty cents ($275.50) outstanding, so that the total amount of cash on hand at that time was the sum of ten hundred and ninety-five dollars and sixty cents ($1,095.60).

"The Treasurer further reports that since the date of his last report, he has deposited in the Orange National Bank money received from various sources, as shown on Schedule 1, hereunto annexed, the sum of seventeen hundred and fifty dollars ($1,750.00), and has been credited with six dollars and twenty-three cents ($6.23) interest, so that with the balance above referred to he had cash on hand to the amount of twenty-eight hundred and fifty-one dollars and eighty-three cents ($2,851.83).

"The Treasurer further reports that since the date of his last report he has signed warrants, as shown on Schedule 2, hereunto annexed, amounting to twelve hundred and forty-three dollars and eighty-nine cents ($1,243.89), so that the total amount of cash on hand on the date of this report is sixteen hundred

and seven dollars and ninety-four cents ($1,607.94). Warrants 2017, for two dollars and fifty cents ($2.50); 2125, for three dollars ($3.00), and 2155, for twenty-five dollars ($25.00), are now outstanding, so that he now has on deposit in the Orange National Bank, with said warrants outstanding, the sum of sixteen hundred and thirty-eight dollars and forty-four cents ($1,638.44).

"All of which is respectfully submitted this eleventh day of March, nineteen hundred and fifteen.

"SIMEON H. ROLLINSON,
"Treasurer."

SCHEDULE 1.

1914.			
Dec. 24	Balance	$1,095.60	
1915.			
Jan. 6	Summit	250.00	
" 8	Irvington	250.00	
" 18	South Orange	250.00	
" 18	Millburn	250.00	
" 18	West Orange	250.00	
" 18	Newark	500.00	
	Interest	6.23	
	Total		$2,851.83

SCHEDULE 2.

1914.		
Dec. 30	N. Y. Tel. Co.	$ 20.45
" 30	American Surety Co.	20.00
" 30	Stanley A. Miller	173.50
" 30	Summit Herald	18.00
" 30	S. H. Rollinson	62.50
" 30	Francis Speir	25.00
" 30	Chas. F. Kraemer	25.00
" 30	Harry J. Stanley	20.00
" 30	E. S. Allen	15.00
" 30	Jno. J. Kenney	20.00
" 30	E. L. Smithers	15.00
" 30	J. G. D. Knight	25.00
" 30	Corey W. Sandford	11.45
1915.		
Jan. 30	Alexander Potter	83.33
" 30	Corey W. Sandford	170.00
" 30	John J. Keating	100.00
" 30	Arthur Tepper	35.16
Feb. 27	Alexander Potter	83.34
" 27	Corey W. Sandford	170.00

"	27	John J. Keating	100.00
"	27	Arthur Tepper	35.16
"	27	Arthur Tepper	16.00
			1,243.89
			$1,607.94

The Auditing Committee presented a report from C. C. Taylor, Accountant, as follows:

"722 Clifton Avenue, Newark, N. J.,
"March 6, 1915.

"M. E. S. Allen,
"Chairman Auditing Committee, Joint Meeting,
"Scotland Road, South Orange, N. J.:

"Dear Sir:—According to arrangement with Mr. Tepper, I beg to report that I have made an audit of the books and accounts of the Secretary and Treasurer of the Joint Meeting, from April 1, 1911, to April 1, 1914, and hereby certify same to be correct and in good order. I wish to call atention to an item of $16.92 as shown on the Trial Balance herewith, which still remains in the Orange National Bank, in the name of William Rollinson, Treasurer. The resolution was voted after my former audit, requesting that the bank should transfer this balance to the credit of Mr. S. H. Rollinson, Treasurer, but as the transfer has not yet been made, I would recommend that it now be done.

"I wish also to call attention to the assessment levied against the Town of Irvington, June 28, 1906, for $300, which still remains unpaid, and should be collected as all of the other municipalities paid the assessment of that date.

"I notice in the minutes of June 21, 1912, that the bill of Oscar W. Palmenberg, for testimony in the Drake case, is chargeable to Irvington, Newark and South Orange. I beg to report that this amount has not been paid by these municipalities, in order that you may take whatever action seems desirable.

"Respectfully submitted,
"C. C. Taylor,
"Accountant."

TRIAL BALANCE—JOINT SEWER MEETING,

As of April 1, 1914.

Cash in Orange National Bank in the name of William Rollinson, Treasurer	$ 16.92	
Cash as per Treasurer's cash book		$ 41.67
Petty cash	100.00	
Interest		94.85
Earle & Dougherty		41.40
Irvington—Assessment June 28, 1906, not paid	300.00	
Irvington—Pro rata share O. W. Palmenberg June 21, 1912	50.00	
Newark " " "	50.00	
South Orange " " "	50.00	
Maintenance account		389.00
	$566.92	$566.92

The Secretary was directed to send the Town of Irvington a bill for assessment June 28, 1906, $300.00, which is still unpaid, together with a letter stating facts in connection therewith, and the Secretary was directed to follow this up and report at next meeting.

Also the Secretary was directed to send bills to Irvington, Newark and South Orange, for $50.00 each, being the share of the municipalities of O. W. Palmenberg's bill, as per resolution passed at the meeting of June 21st, 1912.

A motion was made that the Orange National Bank be requested to pay to the Treasurer, Mr. S. H. Rollinson, the old balance of $16.92, standing in the name of Wm. Rollinson. So ordered. The Secretary was directed to send a copy of this resolution to the Orange National Bank.

The following letter from Union Township was referred to the Engineer:

"The Joint Sewer Commission,
"South Orange, N. J.:

"Gentlemen:—Your attention is hereby directed to the fact that we have received several complaints in regard to the overflow of the sewer east of Union Avenue, Union, N. J.

"It has been said by the people living close by that these manhole covers blow off and rise from six to eight feet in the air; that is after a storm, flooding the entire neighborhood.

"Yours truly,
"FREDERICK STONE,
"Secretary, Board of Health."

The following correspondence, re Assembly Bill No. 337, was ordered printed in the minutes:

"March 1, 1915.

"Adrian Riker, Esq.,
"164 Market Street,
"Newark, N. J.:

"Dear Sir:—Enclosed please find Assembly Bill No. 337, entitled 'An Act to enable owners of property fronting on any public street or highway through and over which the pipes or mains of the sewage system of any municipality are laid and maintained to connect with and use the same for sewage purposes.'

"This looks to me like an attempt to obtain something for nothing. I have seen Barradale, the assemblyman who lives in South Orange, and told him that we strongly object to the bill. Will you enter a protest against its passage, if you deem it necessary?

"Very sincerely yours,

"Francis Speir."

"ASSEMBLY, NO. 337.
"STATE OF NEW JERSEY.
"Introduced February 8, 1915,
"By Mr. Barbour.
"Referred to Committee on Judiciary.

"An Act to enable owners of property fronting on any public street or highway through and over which the pipes or mains of the sewage system of any municipality are laid and maintained to connect with and use the same for sewage purposes.

"Be it enacted by the Senate and General Assembly of the State of New Jersey:

"1. Wherever the sewer or sewage system of any municipality of this State and the sewer pipes and mains of any sewer or sewage system installed or maintained by any municipality of this State shall be laid and maintained over and through any public street or public highway of another municipality, including boroughs, towns, townships and cities, the property owners owning lands fronting on any public street or highway in any such municipality through and over the public street or streets, public highway or highways, of which the sewer or sewage system of another municipality may or shall be laid or pass and be maintained, shall have the right to connect with such sewer or sewage system and the pipes and mains thereof and use the same for sewage purposes at any point thereon in the public street or public highway upon which such property

shall front and through and in which such sewer or sewage system and the pipes and mains thereof are laid and maintained, upon the same terms and conditions as are prescribed by and in the municipality by and for which such sewer or sewage system is installed and maintained, for entrance and connection with the sewer or sewage system of such municipality by the actual residents and property owners thereof.

"2. This act shall take effect immediately.

"STATEMENT.

"This bill is introduced for the purpose of allowing any property owner owning property fronting on the line where a sewer trunk line passes to connect with said sewer on the same terms and conditions as the adjacent municipality."

"March 2, 1915.

"Francis Speir, Jr., Esq.,
"52 Wall Street,
"New York City:

"My dear Frank:—I have yours of March first with enclosure, Assembly Bill No. 337, which I return herewith. My records do not disclose that any action has been taken upon this bill, and I therefore assume that it is still in the Committee on Judiciary.

"Upon my attention being directed to this bill I wrote to Mr. Barbour, the introducer, and to Mr. Runyon, the Chairman of the Judiciary Committee, and enclose for your information copies of these letters.

"I have not received any acknowledgment from either of these gentlemen. Just what that may indicate I am unable to say.

"I think I will also write to one or two of the Essex County Assemblymen, drawing attention to this bill, and requesting them to keep me advised if it is pushed in the shape in which it is introduced.

"Yours very truly,

"ADRIAN RIKER."

"February 17, 1915.

"Mr. William J. Barbour,
"Haledon, Passaic Co., N. J.:

"Dear Sir:—My attention has been directed to Assembly Bill No. 337, introduced by you February 8th, 1915, and referred to the Committee on Judiciary. I am Counsel for the Passaic Valley Sewerage Commissioners and also for the Joint Meeting of certain municipalities in Essex and Union Counties which have constructed a joint outlet sewer serving these municipalities and discharging into tide-water. I think it is

possible that your Bill may involve both of these enterprises, and therefore would be very much obliged to you if you will let me know whether this result is involved in the Bill.

"So far as the Passaic Valley Sewer is concerned, it does not pass through the territory of any municipality excepting those contracting for its construction until it leaves the pumping station in the City of Newark, from which point it is a pressure tunnel at great depth, and which could not by any possibility be used for local sewage, both by reason of its depth, and because the sewage is driven through the tunnel under pressure.

"In the case of the other joint sewer, its capacity is so nearly occupied that it is impossible to admit any more territory to its use.

"I would therefore suggest that your Act be amended by adding at the end of the first section the following clause:

" 'Provided that this Act shall not be taken to apply in any respect to any joint outlet or intercepting sewer constructed by or for two or more municipalities of this State.'

"I also desire to draw your attention to the fact that the statement of the purpose of the Act does not seem to be as comprehensive as the body of the Act. The statement is 'To allow any property owner owning property fronting on the line where a sewer trunk line passes to connect with said sewer.' The body of the act provides as follows: 'The property owners owning lands fronting on any public street or public highway in any such municipality through and over the public street or streets, public highway or highways, of which the sewer or sewage system of another municipality may or shall be laid * * * shall have the right to connect with such sewer.'

"It would therefore seem that the body of the Act contemplates the use of the sewer by any property in a municipality through which a sewer may be actually maintained by another municipality.

"If this is the correct view of the Act you will observe that the result would be that one municipality would pay for the sewer, and the other would have all the advantage of it, without making any payment toward it.

The constitutionality of such a provision may well be doubted.

"Yours very truly,

"Adrian Riker."

"February 17, 1915.

"Hon. William N. Runyon,
"Assembly Chamber,
"Trenton, N. J.:

"Dear Sir:—My attention has been drawn to Assembly Bill No. 337, introduced by Mr. Barbour, February 8th, 1915, and referred to the Committee on Judiciary.

"I am Counsel for the Passaic Valley Sewerage Commissioners, constructing a great intercepting sewer for the municipalities in the Passaic Valley. I am also Counsel for the Joint Meeting of a number of other municipalities in Essex and Union County, which is now operating an outlet sewer constructed some fifteen or twenty years ago.

"This Bill, if it becomes a law, may injuriously affect both of these great enterprises, and I have accordingly written Mr. Barbour, suggesting an amendment which will remove the possibility of the Act applying to these enterprises.

"If Mr. Barbour is satisfied to have the amendment incorporated in the Act I would not desire to be heard further with reference to it. As the Act stands now, however, I do desire to be heard before your committee in case the Bill is pressed for report in its present form.

"I enclose a copy of a letter addressed by me to-day to Mr. Barbour.

"Yours very truly,

"Adrian Riker."

The following bills were read, approved and ordered paid, a vote by roll call resulting, five ayes, no noes:

Corey W. Sandford, expense account	$ 11.45
Alexander Potter, January salary	83.33
C. W. Sandford, January salary	170.00
John J. Keating, January salary	100.00
Arthur Tepper, January salary	35.16
Alexander Potter, February salary	83.34
C. W. Sandford, February salary	170.00
J. J. Keating, February salary	100.00
Arthur Tepper, February salary	35.16
Arthur Tepper, petty cash	16.00
Summit Herald	18.00
Adrian Riker	150.00
N. Y. Telephone Co.	25.76
Queen-Gray Co.	15.00
Stanley A. Miller	9.20
James B. Clow & Sons	24.98
C. C. Taylor	100.00
J. J. Keating, expense account	1.55

On motion the meeting adjourned.

ARTHUR TEPPER,
Secretary.

Joint Meeting of April 22, 1915.

A meeting of the Joint Meeting was held on Thursday evening, April 22nd, 1915, at 8 o'clock, in South Orange Village Hall.

Present: Francis Speir, Chairman; Messrs. Denman, of Newark; Stanley, of Irvington; Kenney, of West Orange; Knight, of Summit; and Mr. C. F. Coaney represented Millburn. Messrs. Rankin and Casey were also present.

The minutes of the last meeting were on motion approved as printed.

The Engineer read the following report, which was accepted and ordered placed on the minutes:

"April 22, 1915.

"To the Joint Meeting:

"Gentlemen:—

"At the meeting of March 11, your Engineer submitted a report upon certain conditions which had arisen in connection with the operation of the joint sewer. Among the matters taken up was a complaint submitted by Mr. E. S. Allen, Chairman of the Sewer Committee of the Village of South Orange, in reference to the surcharging of the West Orange-South Orange sewer as it passes through the Village of South Orange. Your Engineer had already reported upon the apparent grave increase in the flow in this sewer since the exchange of capacities between West Orange and Orange. A study of the charts and of the velocities in the sewers indicates that only a part of this surcharging was due to the increased flow coming from the City of Orange, and that a part of it was due to the fact that the character of the material being discharged from Orange was such as to effectually impede the velocity of the flow in the sewer.

"Since that meeting your Engineer has given instructions for the cleaning out of the Meadowbrook sewer for five manholes below the West Orange line, and as a result of this cleaning we find that, as opposed to the 22 per cent. decrease in capacity that we assumed might exist in this sewer from this cause, the actual decrease in the carrying capacity of the sewer due to the hat factory waste is 29.1 per cent. Other than that it decreases the carrying capacity of the sewer, the discharge of this waste into the sewer has no further disadvantageous effect upon the

sewer. It is a question for the Joint Meeting to decide, however, whether the expense of this cleaning should be charged against the Joint Meeting or against the individual municipality whose contribution to the Joint Trunk Sewer is responsible for this condition.

"The surcharging of the sewer because of the increased flow from West Orange occasioned by its exchange of capacity with Orange, will be righted within a year, because the contract between West Orange and Orange terminates next year, and, as I understand from the Chairman of the Sewer Committee of West Orange, will not be renewed except upon such terms as will more nearly equalize the volumes of sewage flow exchanged between the two municipalities; otherwise the flow from Orange will be entirely cut off and the pumping station re-established for West Orange.

"Your Engineer is of the opinion that the matter of the surcharging of the sewer in the Irvington section and its proper method of relief, should receive serious consideration and be referred to a committee for proper solution. There is no question but that the Joint Trunk Sewer is amply large for many years to come to carry the flow for which it was designed, and this notwithstanding the fact that the population of the Town of Irvington has already reached the estimated population of 18,000. which was the basis upon which the original design was calculated. Irvington, for instance, can grow much larger without increased sewerage outlet facilities if it were possible to confine the flow in the sewer to such flows as was anticipated when the design was made and the construction carried out.

"The trouble arising in Irvington is due altogether to the admission into the sewer of waters which the sewer was not primarily intended to carry. The Lyons Avenue section of Newark contributes in times of storm nearly 1,500,000 gallons out of a total flow assigned to Newark proper of 2,085,300 gallons. The effect of this flow is to decrease the carrying capacity of the Augusta Street line from 1,800,000 to 1,090,000 gallons. Furthermore, it is possible that the retardation of the flow in the Lyons Avenue sewer might raise the water in the manhole at Augusta Street sufficiently high so as to force all of the Augusta Street sewage upon the surface of the ground.

"As to Newark's capacity, it will be interesting to note that, while your Engineer originally recommended that Newark proper should purchase 13.3 per cent. of the capacity of the sewer, the then Engineer of sewers of Newark, Mr. Ernest Adam, was of the opinion that Newark should only purchase 5.22 per cent. of the capacity of the sewer, and in view of Mr. Adam's recommendation, Newark compromised by agreeing to take 9.93 per cent. of the capacity of the sewer. There is no question but that in times of heavy rains this amount is greatly exceeded.

"The question is an embarrassing one because it requires Newark to adopt different regulations for the treatment of roof water in this section from those in other sections of Newark, which is always a cause of difficulty. There is nothing in the contract to prevent Newark from discharging roof water into the sewers. The only restriction is that they shall not exceed their capacity. There has been no fixed quantity determined for the various outlets of Newark. Newark or any other town has a right, within reasonable limits, to vary these quantities in the various outlets, always provided that the exercise of this option is not injurious to their neighbors. As the growth of Newark, Irvington, West Orange and Vailsburg has been very largely in excess of the anticipated growth, we are facing these problems much sooner than should normally have been expected, but it is a fact that we are facing these problems and they call for solution.

"As an abstract legal proposition the problem can be solved by requesting the various municipalities to determine the amount of capacity they desire in their respective outlets, and at such points insert fixed weirs so that it will be physically impossible to discharge into the sewers below a quantity in excess of this volume. It is to be hoped that the problem can be solved in some other less drastic manner, and the intention of this report at this time is to suggest the appointment of a committee that will devote time to the study of this matter in all its phases.

"The exposed iron pipe across the land of the Elizabethtown Water Company and across the Elizabeth River requires painting. Your Engineer would request authority to invite proposals for this work and authorize the execution of the work by the lowest responsible bidder with the understanding that the work cost not to exceed the price paid in former years.

"The question of the care of the crossings of the Elizabeth River and the Rahway River was taken up at a former meeting, and, I believe, adverse action taken as to the continuance of these contracts. These two contracts are advisable. It is impossible for the inspector to visit these points every day, and in case of a storm, trees lodged in front of these crossings may cause serious damage. Having a man practically upon the ground to note and to correct any such trouble promptly, is advisable, and saves far more than the amount paid in the time that the inspector can devote to other parts of the work.

"There has been some discussion about a connection to the main sewer in Union Township from the farm of Hutmacher. Your Engineer requested that an entrance fee of $10.00 be paid in conformity with the rules of the Joint Meeting. The Union authorities have questioned the right of the Joint Meeting to collect this fee. This fee is justified in the opinion of your

Engineer by reason of the clause in the contract with Union Township, which reads as follows:

"'And it is further agreed that all connections with said outlet or trunk sewer made by the party of the first part shall be made at the expense of the party of the first part under the reasonable regulations and inspections of the party of the second part.'

"The Joint Meeting adopted a set of reasonable Rules and Regulations which set forth, among other things, that 'there shall be a charge of $10.00 for permission to make any connection with the joint sewer or its branches, which charge shall be paid by the municipality within which the connection is made to the Treasurer of the Joint Meeting.'

"Your Engineer visited the ground and finds that this connection has already been made and that it consists of a sewer 500 or 600 feet long, and that it was laid without any supervision by the Joint Meeting. Our inspector informs me that he was not advised of its contemplated construction. We have no evidence as to how this sewer was laid, and it may have been laid in such a manner as to contribute to the flow in the sewer as much as twenty ordinary house connections. Unless otherwise instructed, your Engineer will authorize the inspector to determine the tightness of this sewer in rainy weather, and if it is not reasonably tight, your Engineer asks for instructions in the premises. The amount of flow, irrespective of the condition of this sewer, can be charged up against the quota of Union Township.

"In this connection it might be well to state that Union Township has a right to discharge 375,000 gallons per day into the Joint Trunk Sewer, 150,000 gallons of which is permitted without charge. As soon as this is exceeded, $900.00 in cash shall be paid. As soon as 250,000 gallons is exceeded, another $900.00 shall be paid, and when 300,000 gallons is exceeded $700.00 shall be paid. Your Engineer has reason to believe that the amount now being contributed to the Joint Trunk Sewer chargeable against this quota warrants the payment of one or more of these instalments, and asks for authority to make the necessary determinations of the flow from the various points at which Union Township contributes its flow, for the purpose of determining this question.

"Respectfully submitted,

"ALEXANDER POTTER."

On motion the various recommendations made by the Engineer were taken up seriatim:

Re Cleaning of Meadowbrook Branch.—Mr. Kenney was asked to take up with the Orange authorities the question as to

keeping the fur waste out of the sewage, and to report results at next meeting.

Re Investigation of Capacity.—General Knight moved that a committee be appointed to study this question. Committee to consist of the representatives to this body, of the municipalities concerned, together with Chairman, and subject to the advice of Counsel.

Re Painting Exposed Pipe Line.—The Engineer was authorized to have the work done at a price not to exceed former cost for same work.

Re Watchman at Elizabeth River Crossing.—Mr. Stanley was authorized to make what arrangements seem necessary. (The watchman at Railway River crossing is still under contract with Joint Meeting.)

Re Hutmacher Connection.—Engineer was authorized to have inspection made, and the charge for the connection will be based on the results of same.

The Secretary reported that on the strength of correspondence between the Engineer's office and the Township of Union, a permit was issued for this connection, with the understanding that the Township should pay the fee determined upon by the Joint Meeting. The Inspector reported that he had inspected the making of the tap.

Re Flow from Union Township.—Engineer was authorized to determine flow contributed by Union Township.

* * *

The Treasurer presented the following report, which was accepted and ordered printed in the minutes:

"To the Various Municipalities Comprising the Joint Sewer Meeting:

"Gentlemen:—

"The Treasurer respectfully reports that on the Eleventh day of March, Nineteen Hundred and Fifteen, the date of his last report, he had on deposit in the Orange National Bank the sum of Sixteen Hundred and Thirty-eight Dollars and Forty-four Cents ($1,638.44), with three warrants for Two Dollars and Fifty Cents ($2.50), Three Dollars ($3), and Twenty-five Dollars ($25) outstanding, so that the total amount of cash on hand was Sixteen Hundred and Seven Dollars and Ninety-four Cents ($1,607.94).

"The Treasurer further reports that since the date of this

last report he has deposited in the Orange National Bank the sum of Three Hundred Dollars ($300), as shown on Schedule 1, hereunto annexed, and has been credited with Seven Dollars and Twenty-six Cents ($7.26) interest, so that with the balance above referred to, he had on hand amounting to Nineteen Hundred and Fifteen Dollars and Twenty Cents ($1,915.20).

"The Treasurer further reports that since the date of his last report he has signed warrants, as shown on Schedule 2, hereunto annexed, amounting to Eight Hundred and Forty-three Dollars and Forty-eight Cents ($843.48), and warrant 2,155. for Twenty-five Dollars ($25), has been presented for payment, so that the amount of cash on hand now amounts to Ten Hundred and Seventy-one Dollars and Seventy-two Cents ($1,071.72), with two warrants, 2,017, for Two Dollars and Fifty Cents ($2.50), 2,125, for Three Dollars ($3), now outstanding, so that he now has on deposit in the Orange National Bank the sum of Ten Hundred and Seventy-seven Dollars and Twenty-two Cents ($1,077.22).

"All of which is respectfully submitted this Twenty-second day of April, Nineteen Hundred and Fifteen.

"SIMEON H. ROLLINSON,
"Treasurer."

SCHEDULE 1.

1915.			
Mar. 11	Balance	$1,607.94	
" 18	Irvington (1906)	300.00	
	Interest	7.26	
	Cash on hand		$1,915.20

SCHEDULE 2.

1915.			
Mar. 11	Summit Herald	$ 18.00	
" 11	Adrian Riker	150.00	
" 11	N. Y. Tel. Co.	25.76	
" 11	Queen Gray Co.	15.00	
" 11	Stanley A. Miller	9.20	
" 11	James B. Clow & Son	24.98	
" 11	C. C. Taylor	100.00	
" 11	John J. Keating	1.55	
" 11	S. H. Rollinson	62.50	
" 31	Alexander Potter	83.33	
" 31	Corey W. Sandford	170.00	
" 31	John J. Keating	100.00	
" 31	Arthur Tepper	35.16	
" 31	Arthur Tepper	48.00	
			843.48
	Balance		$1,071.72

The following resolution was offered and seconded, and on being put to vote by roll call was adopted—five ayes; no noes:

"Resolved, That the several municipalities do raise and pay to the Treasurer of the Joint Meeting the sum of $1,750.00, which shall be assessed upon the joint municipalities in the proportion fixed by the contract between the several municipalities as provided for the care and maintenance of the Joint Sewer, i. e., each municipality paying an equal amount or one-seventh of such assessment (excepting the City of Newark, which shall pay two-sevenths, or one-seventh for Newark and one-seventh for Vailsburg); and, further, that the Secretary be directed to notify the various municipalities of such assessment and the proportion to be paid by each; and be it further

"Resolved, That the said moneys be paid to the Treasurer of the Joint Meeting within twenty days of the 22nd day of April, 1915.

"This is the assessment for the first quarter of 1915."

On motion the meeting adjourned.

ARTHUR TEPPER,
Secretary.

Joint Meeting of May 27, 1915.

A meeting of the Joint Meeting was held in South Orange Village Hall on Thursday evening, May 27th, 1915.

Present: Mr. Francis Speir, Chairman; Messrs. Denman, of Newark; Stanley, of Irvington; Seymour, of South Orange; Kenney, of West Orange; Byrd, of Millburn, and Gen. Knight, of Summit.

Engineers Rankin, of Newark, and Casey, of Irvington, were also present.

The minutes of the last meeting were approved as printed.

The Engineer read the following report, which was accepted and ordered printed in the minutes:

"May 27, 1915.

"To the Joint Meeting:

"Gentlemen:—I submit herewith correspondence with the officials of the City of Elizabeth in reference to granting to the City the right to use the upper portion of the Joint Trunk Sewer in the City of Elizabeth for storm water purposes. The first of these letters, under date of May 18th, was addressed by the President of the Board of Public Works of Elizabeth to the Chairman of the Joint Meeting, and reads as follows:

"'Elizabeth, N. J., May 18, 1915.

"'Mr. Francis Speir, President Joint Municipal Sewer Commission, South Orange, N. J.:

"'Dear Sir:—The writer called upon your Municipal Sewer Engineer, Mr. Alexander Potter, New York, who, we regret, was out of the city, and also talked with your Counsel, Mr. Adrian Riker, who suggested that we submit to you, as President of the Municipal Sewer Commission, a proposition which follows:

"'The City of Elizabeth is about to pave Bayway, from Chilton Street to Westfield Avenue, a distance of about 800 feet. The Joint Municipal Sewer is in the center of this street; there is no City sewer in that section of Bayway. As we understand the agreement with the City of Elizabeth, they have the privilege of connecting to the Joint Municipal Sewer for all sanitary sewage, but not for storm water. It would, therefore, be necessary for the City to install a sewer in Bayway in addition to the municipal sewer to take care of the storm water along the section to be paved, at a cost of from $1,200 to $1,500. We desire permission from your Honorable Body to connect to the municipal sewer on the section of Bayway to be paved, as explained above, to take care of three corner basins and one side basin. The entire area of street surface would be 2,000 feet by 36 feet.

"'In April, 1914, the City of Elizabeth constructed a storm water sewer in Bayway, from Jersey Avenue to Vine Street, and in doing this we took care of all the sanitary sewage from Linden Avenue and Murray Street, which was formerly connected to the Joint Municipal Sewer, and the area taken care of by this connection was six times the area to be taken care of in the request made in the first part of this communication. Therefore, having relieved the Joint Municipal Sewer to this extent, as explained, we earnestly request your Commission to grant us the privilege of making the four connections as explained above, with the Joint Municipal Sewer, thus saving to the City of Elizabeth an expense of from $1,200 to $1,500, and we feel that when you consider the relief given by the City in the section explained above, that you will be willing to grant our request.

"'It would be our pleasure, if it is your wish, to have our Engineer go over the situation with your Mr. Potter at any time that might be convenient. As the contract has been awarded for paving part of Bayway referred to, it is necessary that we secure from your Commission some action in regard to the above as quickly as possible, and we would be pleased, in acknowledging, if you would advise us when such a consideration of the question in hand may be expected by your Board.

"'Very respectfully,

"'Board of Public Works,

"'R. B. Cissel,

"'President.'

"Upon the receipt of this letter from the Chairman of our Commission, I got in touch with Mr. Cissel and suggested that the only way, in my judgment, that this request could be granted would be for Elizabeth to secure to the Joint Meeting a *Quid pro quo* in the way of granting to the Joint Meeting the right to discharge any surplus quantities of sewage reaching the Joint Trunk Sewer into the storm sewers of Elizabeth which intersect the Joint Trunk Sewer at several points along our outlet sewer.

"I submit herewith a sketch plan showing the district over which this permission is requested. It will be noted that the President of the Board of Public Works states that the distance to be paved is 800 feet, whereas, as a matter of fact, the distance between the two points mentioned is about 2,000 feet. I have since had a conference with the President, who informs me that his statement of the distance being 800 feet was in error and that his letter should have read 1,800 feet.

"The inference in this letter that the entire street surface, which is 2,000 feet by 36 feet, is all the area the rainfall upon which would reach the sewer, is entirely erroneous. Storm water will reach our sewer from all the tributary area lying at a higher elevation which is not taken care of in some other way. The area the rainfall upon which might reach the sewer might well be ten or twenty times this amount. I have made a rough calculation as to the rate at which the storm water can reach our sewer and find that with only a reasonable development of the property, a rate of as much as 6,000,000 gallons a day can reach our sewer, while on the other hand the relief which the President of the Board of Public Works state was afforded the Joint Trunk Sewer because of the elimination of house connections between Linden Avenue and Murray Street, cannot exceed 150,000 gallons per day. As the problem is dealing only with volume and not with the character of the sewage, it will be seen that there can be no comparison between the amount of capacity we are asked to yield and the amount of capacity which Elizabeth has relieved us of.

"In response to my conversation with the President of the Board of Public Works, I received, under date of May 24th, the following letter:

"'Elizabeth, N. J., May 24, 1915.

"'Mr. Alexander Potter,

"'No. 50 Church Street, New York, N. Y.:

"'Dear Sir:—After the conversation had with you on the 'phone a few days ago, the matter of giving us relief by permitting us to connect the storm water at Bayway with the municipal sewer as explained in our letter of May 18th to the President of your Commission, Mr. Francis Speir, we took the matter up with our Engineering Department, and it seems very doubtful as to whether we could give you any relief by allowing an overflow

connection in the MacPherson sewer at Bayway, and even if it could be done the relief given would not amount to more than what is asked for by us at Bayway, as explained in our letter of the 18th. We find that in addition to the relief already given by the City of Elizabeth, as explained in that letter, that the Roselle Park sewer at the foot of Hillside Road was disconnected from the municipal sewer and connected to the city sewer. This you will see also relieves the municipal sewer, and on the ground of the relief given, as explained in this letter and the other letter referred to herein, we trust that your Board of Commissioners will see your way to grant the request made by us in our letter of May 18th to your President, Mr. Speir.

"'I write as above, not only to impress upon you, as far as possible, the importance of some immediate action, but that both questions as outlined before may be settled at your meeting on Thursday evening.

"'As explained before, any further explanation you might desire in connection with the situation at that point will be glad to give it to you through our Engineering Department by appointment at any time or place you may think best to make.

"'Respectfully yours,

"'Board of Public Works,

"'R. B. Cissel,

"'President.

"'P. S.—I have sent a copy of this letter to your President in to-day's mail.'

"From this letter it will be seen that the MacPherson sewer, which crosses under our sewer at the intersection of Bayway and Westfield Avenue, is not large enough to afford us any relief during storm periods.

"The statement made in the above letter that the Roselle Park sewer has been disconnected from our sewer and is discharging into the MacPherson sewer is in error. The facts, as nearly as I can state them, are as follows:

"The El Mora district, now forming a part of Elizabeth, was formerly a part of Union Township. They used Roselle Park's outlet with the understanding that the capacity so used would be charged up against their quota in the Joint Trunk Sewer. Instead of guarding this capacity zealously, they permitted house leaders to be connected to the sewer, with the result that during and after a rain storm consumed practically all of Roselle Park's capacity. The City of Elizabeth subsequently incorporated the El Mora section within the city limits and a physical connection was made between the Roselle Park outlet and the so-called MacPherson sewer extending up through El Mora, so that in times of storm when the Roselle Park sewer was being surcharged with storm water the MacPherson sewer carried off the overflow due to the storm water.

"The construction of a storm sewer on Bayway between Jersey Avenue and Vine Street might afford relief to any surcharging of the Joint Trunk Sewer due to the increment caused by the admission of storm water over the area requested by Elizabeth at this time.

"Your Engineer believes in the spirit of co-operation in this matter, but is opposed to granting Elizabeth any privilege for draining storm water into the Joint Trunk Sewer which may impair the rights of the various constituent members of the Joint Body or the towns to which the Joint Meeting has given certain rights in this sewer, including the City of Elizabeth itself. This matter is too serious to be taken up hurriedly. As the limit of expense stated in Elizabeth's letter is from $1,200 to $1,500 for building a storm water sewer to take care of this district, I am of the opinion that the prospective damage to the Joint Trunk Sewer which might result from granting this request without a most thorough and exhaustive study, might ultimately cost the Joint Meeting many times this amount.

"The time is rapidly approaching when substantial relief in some form or other must be afforded the joint municipalities, for the simple reason that the territory embraced in the district served by the Joint Trunk Sewer has increased in population very much more rapidly than was contemplated. As a matter of fact, in reading over the reports of the engineers called in to pass upon the designs of the writer, the criticism was made that the ultimate contributing population predicted by the writer was over-liberal. As a matter of fact, several of the towns included in the Joint Trunk Sewer are already reaching the population predicted for them in the years 1930-35. This is clearly indicated by the Table of Populations submitted with this report. From this table it will be seen that while the population tributary to the sewer in 1898 was 34,300, in 1915 the population is approximately 93,920, an increase in seventeen years of 173 per cent.—a remarkable increase for so large a territory.

"As to the financial ability of the towns included in the joint project to undertake these necessary improvements, I have prepared a table showing the assessed valuation of the municipalities embraced within the Joint Trunk Sewer scheme in 1898 and have compared these with the assessed valuation in 1914. In 1898 the assessed valuation, including real and personal property, was $14,397,700, whereas in 1914 it was $78,250,451. That is, in sixteen years the assessed valuation has increased 366 per cent. as opposed to a 173 per cent. increase in population. While the construction of sewers in these municipalities is not wholly responsible for this great increase in population and assessed valuation, it is safe to say that without the introduction of sewers in this territory such phenomenal increase were wholly impossible.

"It may be argued that it would have been the part of wisdom to have built the sewer sufficiently large originally to have given adequate facilities for a much longer period of time. In the first place, there are very few projects constructed which are able to serve so large an increase in population. It is customary to provide facilities for an increase of from 100 to 200 per cent. It will also be recalled that when this sewer was built, estimates had been submitted by competent engineering authorities to many of the towns embraced within this Joint Trunk Sewer project, and that the estimates of probable tributary population and sizes suggested by the writer were larger than those suggested by other engineers. The fact that this whole project was constructed by voluntary contribution always made those responsible for its construction careful of unduly increasing expense beyond safe practice lest they would add the straw that would break the camel's back. From this financial showing it is readily seen that these municipalities are in a very much stronger position to-day to pay for any added burden due to increased facilities that are now found to be necessary than they were at the time this project was undertaken.

"Respectfully submitted,

"ALEXANDER POTTER."

TABLE I.

POPULATION OF TOWNS TRIBUTARY TO THE JOINT TRUNK SEWER IN 1898, WHEN PROJECT WAS FIRST CONTEMPLATED, AND IN 1915.

	1898.	1915.
Summit	5,100	9,000
Irvington	4,500	16,400
Millburn	2,400	5,000
Newark	2,000	13,000
South Orange Village	4,500	7,200
Vailsburg	1,800	10,000
West Orange	6,000	14,000
South Orange Township	1,500	5,000
Roselle Park	2,500	4,000
Elizabeth	2,000	6,320
Union Townhip	2,000	4,000
	34,300	93,920

Ratio of increase, 1 to 2.73.

TABLE II.

Showing Assessed Valuation in 1898, When the Joint Trunk Sewer Project Was First Organized, and in 1914.

	1898.	1914.
Summit	$ 2,256,800	$12,115,046
Irvington	1,800,000	13,871,659
Millburn	1,350,000	6,550,716
Newark	1,295,000	4,637,465
South Orange Village	3,320,000	12,943,320
Vailsburg	900,000	6,163,825
West Orange	2,500,000	13,563,898
South Orange Township	975,900	8,359,522
	$14,397,700	$78,205,451

Ratio of increase, 1 to 5.43.

"June 3, 1915.

"To the Joint Meeting:

"Gentlemen:—In accordance with the suggestion at the last Joint Meeting, your Engineer made arrangements to visit Elizabeth at the earliest possible date, and on Tuesday, June 1st, went over the ground in question with the City Engineer of Elizabeth and afterwards met the Board of Public Works in Elizabeth.

"The area that might be tributary to that portion of Bayway under consideration has been or can be very materially reduced by adverse drainage, so that it is possible to limit the total flow of storm water into the Joint Trunk Sewer to a maximum of 1,000 gallons a minute, which is at the rate of approximately 1,500,000 gallons per day. Notwithstanding this limitation, your Engineer in his conference with the Board pointed out that it would be unwise to permit Elizabeth to increase its present capacity in the Joint Trunk Sewer through Elizabeth two hundred per cent. even for brief periods of time unless some provision were made to relieve the Joint Trunk Sewer of any excess brought down as a result of the privilege sought to be granted. Elizabeth's Engineer was of the opinion that their own storm sewers are so taxed that they could under no condition concede this connection.

"The Board agreed to advise your Engineer as early as possible whether they could concede this physical connection between the Joint Trunk Sewer and Elizabeth's storm sewer, but to date nothing has been heard from Elizabeth on this matter. It is, therefore, impossible to fix any definite date for a meeting until such time as word is received from Elizabeth in reference to this exchange.

"Respectfully submitted,

"Alexander Potter."

Re City of Elizabeth's Request.—A motion was made, that the request of the City of Elizabeth as embodied in their communications be refused because of overcharging of sewer capacity, but that if it is desired to renew the application, upon proper notice, opportunity will be given for a speedy hearing. The Secretary is directed to so inform the President of the Board of Works. Seconded and so ordered.

The following report was presented by the Treasurer, and was accepted and ordered printed in the minutes:

"To the Various Municipalities Comprising the Joint Sewer Meeting:

"Gentlemen:—The Treasurer respectfully reports that on the twenty-second day of April, nineteen hundred and fifteen, the date of his last report, he had on deposit in the Orange National Bank the sum of ten hundred and seventy-seven dollars and twenty-two cents ($1,077.22), with two warrants, 2017 for two dollars and fifty cents ($2.50), 2125 for three dollars ($3), outstanding, so that the total amount of cash on hand on that date was ten hundred and seventy-one dollars and seventy-two cents ($1,071.72).

"The Treasurer further reports that since the date of his last report he has deposited in the Orange National Bank the sum of thirteen hundred and fifty dollars ($1,350), as shown on Schedule I, hereunto annexed, so that with the balance above referred to he had cash on hand amounting to twenty-four hundred and twenty-one dollars and seventy-two cents ($2,421.72).

"The Treasurer further reports that since the date of his last report he has signed warrants, as shown on Schedule II, hereunto annexed, amounting to four hundred and forty-eight dollars and forty-nine cents ($448.49), so that the total amount of cash on hand now amounts to nineteen hundred and seventy-three dollars and twenty-three cents ($1,973.23); the two warrants hereinabove referred to, to wit, 2017 for two dollars and fifty cents ($2.50), 2125 for three dollars ($3) are still outstanding, so that he now has on deposit in the Orange National Bank the sum of nineteen hundred and seventy-eight dollars and seventy-three cents ($1,978.73).

"All of which is respectfully submitted this twenty-seventh day of May, nineteen hundred and fifteen.

"Simeon H. Rollinson,
"Treasurer."

SCHEDULE I.

1915.			
Apr. 22	Balance		$1,071.72
Apr. 15	Irvington	$ 50.00	
Apr. 14	South Orange	50.00	
May 5	Summit	250.00	
May 12	Irvington	250.00	
May 17	Millburn	250.00	
May 17	South Orange	250.00	
May 21	West Orange	250.00	
			1,350.00
	Cash on hand		$2,421.72

SCHEDULE II.

1915.			
Apr. 30	Arthur Tepper	$ 60.00	
Apr. 30	Alexander Potter	83.33	
Apr. 30	Corey W. Sandford	170.00	
Apr. 30	John J. Keating	100.00	
Apr. 30	Arthur Tepper	35.16	
			448.49
	Balance		$1,973.23

The committee which was appointed at the last meeting to investigate the flow for Newark and Irvington presented the following report, which was accepted and ordered printed in the minutes. The action of the committee in engaging expert assistance being concurred in by the Board:

"City Hall, Newark, N. J., May 26th, 1915.

"Joint Meeting:

"Gentlemen:—The Committee appointed at the last meeting to investigate the excessive flow in Newark and Irvington sections of the Joint Sewer would respectfully present the following preliminary report and ask for more time to continue their investigations:

"The Engineers have been engaged in an attempt to analyze as far as possible the present flow, dividing it into the legitimate sewage flow, roof water, underground leakage, etc. This involves considerable work as it necessitates determining as closely as possible the population, water consumption, mileage of sewers, number of house connections, rainfall, and also a house to house inspection for leaders and yards connected with the sewer.

"It is believed that if the total flow can be subdivided in this way, the information will prove of considerable value to all the

municipalities, and your Committee will be in a better position to recommend what action, if any, should be taken. Messrs. Rankin, of Newark, and Casey, of Irvington, have been engaged by your Committee as engineers.

"Respectfully submitted,

"A. R. Denman,
"H. J. Stanley."

Mr. Stanley presented the following letter, which was received and ordered placed on file. The bill, which amounts to Twenty Dollars ($20.00), was recommended for payment at the next meeting:

"Irvington, N. J., May 12, 1915.

"Mr. H. J. Stanley:

"Dear Sir:—In reply to your letter of recent date, would say that I will accept your offer to keep the stream clear, at Ten Dollars ($10.00) per year. Enclosed you will find bill for services rendered.

"Yours truly,

"B. E. Larney."

The following letter (which had been delayed in delivery) was read, and on motion was referred to the committee now investigating flow, etc., of Newark and Irvington:

"Irvington, N. J., February 5th, 1915.

"Mr. Arthur Tepper,
Sec'y Joint Sewer Commission,
"Summit, N. J.:

"Dear Sir:—At a regular meeting of the Board of Commissioners, held Wednesday, February 3rd, 1915, a complaint from property owners on Lincoln Place, Irvington, in reference to an overflow of the Joint Trunk Sewer was received, and at said meeting I was instructed to notify the Commission through you of said condition.

"I trust that you will forward this communication to the proper authorities and relief be given to the residents in that vicinity.

"Very truly yours,

"Town Clerk."

Mr. Kenney presented the following, which was received and ordered placed on file:

"Orange, N. J., May 26th, 1915.

"Mr. John J. Kenney, Valley Road, West Orange, N. J.:

"Dear Mr. Kenney:—In the matter of the Orange Sewer carrying podguin, etc., from the hat factories into your sewer, would quote the following report from Fred T. Crane, City Engineer:

"'Regarding the complaint that the discharge of waste materials from the hat manufacturers of the City of Orange into the West Orange Outlet Sewer causes obstruction to the flow of sewage in the same, I know of no way to verify the statement.

"'The practice of the manufacturers can be stopped under Sections 9 or 10, Supplement to Ordinance, November 20th, 1893. This hair, podguin, etc., can be strained out of the wastes from the kettles and not allowed to enter the sewer.'

"We have ordered these hat manufacturers to make these changes.

"Yours very truly,

"HARRY D. WETHLING,

"Director of Streets and Public Improvements."

Mr. Denman moved that it is the sense of the Joint Meeting that the State Board of Health be invited to accompany the Joint Meeting on its next inspection of the Joint Sewer System. Seconded and so ordered.

On motion the meeting adjourned.

ARTHUR TEPPER,
Secretary.

Joint Meeting of June 24, 1915.

The Annual Meeting of the Joint Meeting was held in South Orange Village Hall, on Thursday evening, June 24th, 1915, at 8 o'clock.

Present: Francis Speir, Chairman; Messrs. Denman, of Newark; Stanley, of Irvington; Seymour, of South Orange; Kenney, of West Orange; Byrd, of Millburn, and Gen. Knight, of Summit.

The minutes of the last meeting were approved as printed.

The Engineer submitted the following report, which was, on motion, duly seconded, ordered printed in the minutes, the various items to be taken up seriatim:

"June 24, 1915.

"To the Joint Meeting:

"Gentlemen:—

"I submit letter received from Union Township, together with a copy of the opinion of their Counsel, in respect to connections made to the Joint Trunk Sewer through Union Township.

"The Counsel is of the opinion that the Joint Meeting has a right to prescribe rules and regulations and to require notice when direct connection with the Joint Trunk Sewer is made, but

he denies the right of the Joint Meeting to interfere with connections made by Union Township to such branch sewers as have been connected with the Joint Trunk Sewer by proper authority. I am of the opinion that the Counsel is correct in this conclusion as a general proposition, but in the case of Hutmacher, who has built a long house connection, such a line, no matter what the length, must be considered as a house connection and not as a public sewer.

"The Joint Meeting regulations prescribe that each house must have a separate sewer connection. If the Hutmacher connection is to be considered a public sewer, it should have been built as all other public sewers are constructed; namely, with manholes at stated intervals, and built as a straight line between consecutive manholes.

"This matter may assume greater importance in the future than it does at present, when some other persons in the Township might ask permission to connect onto the upper end of the Hutmacher sewer. It therefore becomes essential for the Joint Meeting to have some clear-cut understanding as to the rights of the Township to extend sewer privileges to the people throughout the Township.

"The contract between the Township of Union and the Joint Meeting provides that they have the right to discharge into the Joint Trunk Sewer 375,000 gallons per day, of which 150,000 gallons may be discharged without cost to the Township. When 150,000 gallons is exceeded, a payment of $900.00 is due. When the discharge exceeds 200,000 gallons, a second payment of $900.00 is due. When the discharge exceeds 300,000 gallons, an additional $700.00 is due.

"When this contract was entered into, El Mora, a district adjoining the City of Elizabeth, was a part of the Township. Since that time El Mora has been taken into the City of Elizabeth. The houses in this district have most of their leaders connected directly to the sewers, and many of these houses discharge into the Roselle Park outlet sewer just before it empties into the Joint Trunk Sewer. Some of the sewers in the El Mora section discharge directly into the Joint Trunk Sewer. If the contribution from these houses is to be charged against the Union Township quota, then the Joint Meeting has a right to demand the full payment of $2,500.00 above stated, for in times of storms the contribution from this district exceeds the allowable contribution.

"I would suggest that this matter be referred to Counsel for his opinion as to whether or not the contribution from the area referred to, all of which is now within the City of Elizabeth, shall be charged against Union Township's quota or Elizabeth's quota.

"In the opinion of your Engineer, Roselle Park should not be permitted to consider the El Mora contribution as a part of their rights to capacity in the Joint Trunk Sewer, for in our arrangements with Roselle Park we have agreed to take care of all of the sewage coming from Roselle Park, but this does not give them any right whatever to make any supplemental contract with a third party by which they will take care of the sewage of such municipality at the expense of the capacity owned by others in the Joint Trunk Sewer.

"I beg to call your attention to the fact that the City of Elizabeth has not communicated with me further in reference to the right to use the Joint Trunk Sewer for storm water purposes, so I presume that this matter is settled.

"I desire to call your attention to the fact that, although repeatedly urged to notify us when connections are to be made to the Joint Trunk Sewer, the City of Elizabeth is proceeding in violation of their agreement not to make connections without notification to us. However, fairness requires us to state that the men making these connections endeavor to do so with as great care as possible, and our inspector has no criticism to make as to the manner in which the connections that he sees are made, but it is quite possible that connections can be made from time to time which it is physically impossible for him to inspect, and therefore I am of the opinion that the City of Elizabeth should invariably notify us of their desire to make these connections, in accordance with the agreement entered into between the Joint Meeting and themselves. As I have already called the attention of Elizabeth to this oversight, I would ask the instructions of the Joint Meeting as to whether I shall again notify them, or whether this matter should be taken up through Counsel.

"Respectfully submitted,

"ALEXANDER POTTER."

UNION TOWNSHIP COMMITTEE.

"Union, N. J., June 17th, 1915.

"ALEXANDER POTTER, ESQ.,
"50 Church Street,
"New York, N. Y.:

'Dear Sir:—

"Pursuant to directions of the Union Township Committee I am sending you herewith copies of an opinion rendered by our Township Counsel, John K. English, with relation to the matter of permits and fees charged by the Joint Commission for tapping the Trunk Sewer and its branches.

"This opinion was obtained by the Township Committee as a result of the difficulty had by Mr. Hutmacher, this case, as you will recall, having been the subject of correspondence between yourself and the writer.

"The Township Committee directed me to say that it will be their purpose to be guided by the enclosed opinion in the Hutmacher case as well as future cases.

"Very respectfully,

"WILLIAM W. FRIBERGER,

"Township Clerk."

"May 3rd, 1915.

"WILLIAM W. FRIBERGER, Clerk,

"Union Township,

"Millburn, New Jersey:

"Dear Sir:—

"I have examined copy of ordinance authorizing execution of agreement between certain municipalities which, being joined together for their common interests in relation to a certain sewer are in this respect called the Joint Meeting of the second part, and Union Township of the first part, and my opinion is as follows:

"The several municipalities have a right to make regulations and to impose charges upon the contracting parties in accordance with whatever their original agreement was, just as stockholders of a corporation have a right to make rules for the government of all, but they have not the right to impose payments or make regulations in regard to any other municipality with whom they may have a contract any more than any corporation or partnership has a right to impose regulations upon some individual with whom such corporation or partnership has entered into a contract. The relations between the Joint Meeting and Union Township are purely contractual and must be ascertained by the interpretations of the contractual ordinance under the terms of which the Township allowed sewer pipes to be laid along its streets.

"As a consideration for laying the pipe the Joint Meeting gave to Union Township the right to discharge a certain amount of sewage in the Trunk Sewer through branch sewers, and in order that the work of connecting with its own pipes might be done properly and in a workmanlike manner, saw to it that the ordinance provided 'that all connections with said outlet or trunk sewer made by the party of the first part shall be made at the expense of the party of the first part under the reasonable regulation and inspection of the party of the second part.'

"The only connection with the trunk sewer is a connection of a branch sewer therewith, and this, under such clause, must be made after notice to Joint Meeting and in accordance with the latter's reasonable regulations and inspection.

"I do not think that the clause or anything in the ordinance has to do with the connections made by a private owner with the branch sewer, and do not think the Joint Meeting has a right

to charge for such connection or even to be notified when such connection is made, but on the contrary believe that the only question in which said Joint Meeting can have any interest is, as above stated, the connection of the branch sewer with the trunk sewer. The correspondence between you and representatives of the Joint Meeting shows that the latter has made certain rules and regulations for its own government.

"In my opinion, such rules govern the parties to the original contract but cannot govern Union Township. I can see no reason why the Joint Meeting should be in any way concerned with the connection or manner of connection by private owners with the branch sewer, but it would be concerned about the methods of connecting such branch sewer with the Trunk Sewer, as the latter is the property of the Joint Meeting.

"JOHN K. ENGLISH,
"Township Counsel."

Regarding Connections in Union Township.—Motion made that this question be referred to Counsel. So ordered.

Re El Mora Quota.—Motion made that this also be referred to Counsel. So ordered.

Re Elizabeth's Connections Without Inspection.—Motion made that the Secretary be directed to notify the Elizabeth authorities that the Joint Meeting wishes to be properly notified of all connections contemplated. So ordered.

The Treasurer submitted the following report, which was received and ordered printed in the minutes:

"To the Various Municipalities Comprising the Joint Sewer Meeting:

"Gentlemen:—

"The Treasurer respectfully reports that on the Twenty-seventh day of May, Nineteen Hundred and Fifteen, the date of his last report, he had on deposit in the Orange National Bank the sum of Nineteen Hundred and Seventy-eight Dollars and Seventy-three Cents ($1,978.73), with two warrants, 2017 for Two Dollars and Fifty Cents ($2.50) and 2125 for Three Dollars ($3), outstanding, so that the total amount of cash on hand at that date was Nineteen Hundred and Seventy-three Dollars and Twenty-three Cents ($1,973.23).

"The Treasurer further reports that since the date of his last report he has deposited in the Orange National Bank the sum of Five Hundred and Fifty Dollars ($550), as shown on Schedule 1, hereunto annexed, so that with the balance above referred to he had cash on hand amounting to Twenty-five Hundred and Twenty-three Dollars and Twenty-three Cents ($2,523.23).

"The Treasurer further reports that since the date of his last report he has signed warrants, as shown on Schedule 2, hereunto annexed, amounting to Three Hundred and Fifty-three Dollars and Thirty-three Cents ($353.33), so that the total amount of cash now on hand amounts to Twenty-one Hundred and Sixty-nine Dollars and Ninety Cents ($2,169.90). The two warrants hereinabove referred to are still outstanding, so that he now has on deposit in the Orange National Bank the sum of Twenty-one Hundred and Seventy-five Dollars and Forty Cents ($2,175.40).

"All of which is respectfully submitted this Twenty-fourth day of June, Nineteen Hundred and Fifteen.

"SIMEON H. ROLLINSON,
"Treasurer."

SCHEDULE 1.

1915.			
May 27	Balance		$1,973.23
May 7	(Received June 23rd) Newark	$ 500.00	
Mar. 29	(Received June 23rd) Newark	50.00	
			550.00
	Cash on hand		$2,523.23

SCHEDULE 2.

1915.			
May 29	Alexander Potter	$ 83.33	
May 29	Corey W. Sandford	170.00	
May 29	John J. Keating	100.00	
			353.33
	Balance		$2,169.90

The Secretary submitted the following report and Trial Balance, which were on motion ordered printed in the minutes:

"June 24th, 1915.

"To the Joint Meeting:

"Gentlemen:—

"Herewith I beg to hand you a trial balance of the Secretary's books as of April 1st, 1915, which will, I trust, meet with your approval.

"The expenses for the year were distributed as follows:

Salary Chief Engineer	$1,000.00
Salary Chief Inspector (including horse hire)	2,040.00
Salary Assistant Inspector	1,200.00
Salary Secretary (including office rent)	422.00
Salary Treasurer	250.00
Counsel's Retainer and Fees	400.00
Executive Committee	355.00

Labor—Petty Cash account	214.00
Expense, Ventilating Experiment—Irvington	182.70
Audit of Books	100.00
Miscellaneous	290.74
	$6,454.44

"From the above it would appear that the present assessment of $7,000.00 is sufficient for the coming year.

"Respectfully yours,

"ARTHUR TEPPER,
"Secretary."

SECRETARY'S TRIAL BALANCE

AS OF APRIL 1ST, 1915.

Cash in Orange National Bank (in name of Wm. Rollinson, Treasurer)	$ 16.92	
Cash as per Treasurer's Cash Book	1,071.72	
Petty Cash	100.00	
Maintenance Account		$3,047.24
Town of Irvington	300.00	
City of Newark	550.00	
Town of West Orange	250.00	
Village of South Orange	300.00	
Township of Millburn	250.00	
City of Summit	250.00	
Earle & Dougherty		41.40
	$3,088.64	$3,088.64

Communications from Mr. Leroy A. Gibby and Mr. Milton R. Silance applying for position as Secretary were read and ordered placed on file.

Gen. Knight, for the committee appointed to explain to Irvington the proposed contract for maintenance, reported that instructions had been carried out on June 9th, and asked that the committee be discharged. On motion of Mr. Stanley, duly seconded, the committee was discharged with thanks.

Mr. Byrd reported that manhole at the Maplewood Field Club was objectionable on account of bad odors arising therefrom, and asked that a solid head be put on in place of the perforated one. On motion this was ordered done.

Mr. Byrd also reported that new weirs had been installed to measure the flow from Millburn and South Orange Township, and asked that readings be taken and report made at next meeting. So ordered.

Mr. Byrd asked that a manhole and gauge be put in on unmetered section, near junction of Millburn Avenue and Ridgewood Road. Referred to Engineer Alexander Potter.

The following bills were read, approved and ordered paid—a vote by roll-call resulting, six ayes; no noes:

S. H. Rollinson, January, February, March salary	$ 62.50
Alexander Potter, March salary	83.33
Corey W. Sandford, March salary and horse	170.00
John J. Keating, March salary	100.00
Arthur Tepper, March salary and office	35.16
Arthur Tepper labor, petty cash	48.00
Arthur Tepper, labor, petty cash	60.00
Alexander Potter, April salary	83.33
Corey W. Sandford, April salary and horse	170.00
John J. Keating, April salary	100.00
Arthur Tepper, April salary and office	35.16
Alexander Potter, May salary	83.33
Corey W. Sandford, May salary and horse	170.00
John J. Keating, May salary	100.00
Arthur Tepper, May salary and office	35.16
N. Y. Telephone Co.	24.09
Summit Herald	54.00
B. E. Larney	20.00
Gilbert Smith	20.00
Alexander Potter, June salary	83.33
Corey W. Sandford, June salary and horse	170.00
John J. Keating, June salary	100.00
Arthur Tepper, June salary and office	35.16
S. H. Rollinson, April, May and June salary	62.50
Arthur Tepper, expense account	7.25
John J. Keating, expense account	1.60
Francis Speir	20.00
A. R. Denman	20.00
Harry J. Stanley	20.00
E. S. Allen	5.00
G. F. Seymour, Jr.	10.00
John J. Kenney	20.00
E. L. Smithers	5.00
C. F. Coaney	5.00
William Byrd	10.00
J. G. D. Knight	15.00
Corey W. Sandford, expense account	10.60

The Board then went into an election of officers for the ensuing year.

The following gentlemen were unanimously elected:

Chairman—Mr. Francis Speir.
Vice-Chairman—Mr. A. R. Denman.
Secretary—Mr. E. S. Rankin.
Treasurer—Mr. S. H. Rollinson.
Counsel—Mr. Adrian Riker.
Chief Engineer—Mr. Alexander Potter.
Chief Inspector—Mr. Corey W. Sandford.

Mr. Denman made a motion that a committee be appointed by the Chairman, of which the Chairman of the Joint Meeting shall be head, to take up the question of revising the minutes with a view toward indexing same, and report findings at next meeting. The Chair appointed Messrs. Denman and Byrd.

Upon the recommendation of Mr. Potter, the same committee will consider the advisability of revising the Report on the Joint Trunk Sewer, and having another edition printed.

A motion was made that the Chairman be requested to authorize the moving of Secretary's safe and other properties, in his discretion. So ordered.

On motion the meeting adjourned.

Arthur Tepper,
Secretary.

INDEX OF MEETINGS.

Date.	Page.
July 7, 1904	1
July 27, 1904	6
August 7, 1904	13
September 15, 1904	19
November 3, 1904	26
February 9, 1905	35
March 30, 1905	48
April 6, 1905	48
April 27, 1905	59
June 8, 1905	63
July 27, 1905	71
August 2, 1905	75
October 19, 1905	78
December 14, 1905	83
March 22, 1906	90
April 26, 1906	104
June 28, 1906	108
July 28, 1906	111
October 16, 1906	119
January 18, 1907	125
April 25, 1907	130
May 23, 1907	139
June 27, 1907	141
September 26, 1907	146
October 12, 1907	156
December 26, 1907	156
March 26, 1908	164
May 6, 1908	171
June 18, 1908	174
October 15, 1908	180
December 17, 1908	185
January 28, 1909	193
April 1, 1909	195
June 17, 1909	199
July 22, 1909	203

September 23, 1909 206
October 13, 1909 214
December 30, 1909 215
February 24, 1910 224
April 7, 1910 228
June 23, 1910 232
July 21, 1910 241
September 22, 1910 244
January 26, 1911 247
March 9, 1911 251
April 13, 1911 257
June 15, 1911 266
October 26, 1911 270
February 1, 1912 280
April 25, 1912 288
June 21, 1912 295
September 12, 1912 304
November 7, 1912 311
December 26, 1912 328
February 6, 1913 331
April 24, 1913 337
June 19, 1913 343
September 18, 1913 353
November 20, 1913 360
December 11, 1913 369
February 26, 1914 375
May 7, 1914 383
June 18, 1914 394
September 24, 1914 399
December 30, 1914 410
March 11, 1915 418
April 22, 1915 432
May 27, 1915 438
June 24, 1915 448

INDEX.

Agreements, collation and compilation ordered printed, 243.

Allen, Mr. ————, measurements of South Orange apparent leakage, 64.

American Surety Co., return premium on W. Rollinson's bond, 127.

Assembly Bill, No. 337, 1915, letters of Counsel Riker regarding, 428-431.

Assessed Valuations of contributing municipalities of Joint Trunk Sewer, 1898 and 1914, 444.

Assessment, municipalities, for First Division, West Branch, 33.

Assessment, municipalities, for Millburn-Summit Division BI, 33.

Assessment, municipalities, for Lyons Avenue extension, 128.

Assessments and costs of various branches, 11; forms suggested by accountant, 276, 277; method of payment to Secretary, etc., 277; Treasurer to report paid and outstanding at each meeting, 287.

Assessments, municipalities, for maintenance, 24, 58, 69, 76, 89, 94, 108, 128, 138, 163, 178, 194, 201, 209, 227, 239, 250, 268, 287, 310, 330, 335, 345, 358, 369, 382, 397, 416, 438.

Assessments, municipalities, for maintenance, revised plan proposed, 204; committee appointed, 204; report of committee, 209.

Assistant inspector, appointment necessary, 34; George W. Hayward appointed, 34; Corey W. Sandford appointed, 177; elected, 202, 240, 269, 303.

Attendance of members at meeting, payment for, 145.

Audit of books ordered, 125, 145, 177, 202, 256; accountant employed, 268; special audit of books 1904-1911, 274, 277; special audit of books 1911-1914, 426.

Auditing Committee, appointment, 170; reports, 189, 303.

Augusta Street, Irvington, sewer, trouble caused by overflow referred to Engineer, 107, 108; report of Engineer, 111; relief from storm water needed, 131; report of committee, 185; Engineer instructed to prepare

plans for, 202; bids for construction, 204; contract awarded to Harrison Construction Co., 205; final estimate, 206; assistant engineer, 206; work completed and ordered paid, 208; assessment for, ordered and percentage divided, 209; report of engineering committee on conditions, 211; afforded relief reported, 216; balance due Harrison Construction Co. ordered paid, 231; letter of Second Ward Improvement Association regarding odors from, 237; complaint of sewer odors, 306; Irvington Board of Health to attend meeting to consider odors, 327; meeting to consider, 330; refusal of Irvington Health Board to change plumbing code, 353; experimental system of ventilation ordered, 359; plan reported by Engineer, 361; Engineer authorized to place experimental system, 366; proposed plan of Irvington Board of Health refused, 368; letter from Irvington insisting on agreement regarding standpipes, 373; sewer ventilating experiments to be continued, 408; work reported satisfactory, 410; overflowing manholes reported, 422.

Badges for inspectors, 34.

Bayway condition reported satisfactory, 2.

Bayway trolley building necessitates strengthening of sewer, 339; letter of Counsel, 340; committee appointed to consider, 341; tracks supported by Public Service, 344.

Bayway weir gauge No. 60, readings 1907 and 1910, 237.

Beach, Charles H., land needed to adjust Whittingham damages, 4.

Beyer, A. H., assistant engineer, letter discussing maintenance cost and apportionment, 389.

Boerger, E., violation of rules of Joint Meeting and Irvington, 296; sketch of drain, etc., 297.

Bond, Treasurer's, referred to Counsel, 5.

Bookkeeping methods, changes suggested by accountants, 276, 277.

Brookdale Avenue, Vailsburg, sewer trouble, 200; matter left to Engineer, 201; portion of sewer destroyed, 338; letter of Edward S. Rankin suggesting relief, 385; Engineer's opinion that it should be done by Newark, 385; referred to Counsel, 393; sewer reported rebuilt and question of

payment of cost, 400; Newark notified to fill in old manholes, 402.

Budget for 1908-1909, recommended by Auditing Committee, 189.

Capacity, use of, by municipalities, matter of excess for any municipality referred to Counsel, 52; stated in matter of South Orange admission, 87; capacity of various municipalities in the various sections, 99; rights of transference, 165; use of capacity a matter for each municipality, 382.

Capacity and contributing flow, diagram showing relation, 352.

Casey, I. J., engaged as expert engineer in Newark and Irvington excessive flow question, 446.

Cast iron pipe recommended for house connections, 177; uniform specifications for, 325.

Castle's Ice Cream Company's factory, conditions caused by, 367; report of Engineer, 371; discharge into sewer, 400; matter referred to Irvington, 417.

Catch basins in Elizabeth City, correspondence regarding, 339; request denied, 346.

Cattley, E. C. engineer, bill for investigation, 311; warrant lost and action thereon, 329.

Chairman of Joint Meeting, 1904-1915, Francis Speir, Jr., III; elected, 74, 118, 145, 178, 202, 240, 269, 303, 347, 398, 456.

Chairman, temporary, authorized to sign warrants, 18; appointment during absence of Mr. Speir, 226.

Chancellor Avenue, Irvington, drop manhole recommended, 411.

Charts for recording gauges, bill for, 113; bill of Queen & Co. for instruments, 232.

Chief Inspector, *see* Inspector, Chief.

Christianson, Mr., payment for tapping Lyons Avenue sewer, 154.

Christie, James A., work on weir manhole No. 60, 113; ordered paid, 118.

Cleaning of certain sections of sewer still required, 78; cleaning rods ordered bought, 4; purchased from Earle & Dougherty, 17; purchase of additional rods ordered, 42; purchase of cleaning ropes concurred in, 93.

Connections with Joint Trunk Sewer, rule regarding approval of plan, size of pipe, etc., 82.

Construction account ordered closed, 277; reported closed by accountant, 285.

Contract, Joint Meeting and municipalities, for maintenance, ten years, 1907-1917, 139, 156; no action, 161.

Contracts, collation and compilation ordered printed, 243.

Costa Construction Co., contractors Section 3, payment of retained percentage, ordered, 33; payment held up, 52; recommended by Engineer, 59; voted to be paid, 60; ordered paid, 69.

Counsel of Joint Meeting, 1904-1915, Adrian Riker, III; elected, 74, 118, 145, 178, 202, 240, 269, 303, 347, 398, 456.

Current meter purchase ordered, 52; bill for, 71.

Daily contributing flow, average, 1905 to 1912, 350; for 1913, 378.

D. L. & W. R. R., claim of J. P. Hall on account of, 122.

Denman, Arthur R., vice-chairman, 1910-1913, 1915, III; elected, 247, 269, 303, 456; temporary chairman during Mr. Speir's absence, 227.

Desk for Secretary purchased, 170.

Diagram showing contributing flow of Newark-Irvington branch, 355.

Diagram showing relation between capacity and contributing flow, 352.

Diagrams showing records of flow at three points March 17, 1908, 167, 168.

Dials for recording gauges, bill for, 71.

Diamond Mills discharge into sewer reported detrimental, 50; ordered discontinued, 52; decrease in stringy discharge noted, 67; better screening necessary, 182; weir gauge readings to be made, 198; Millburn to take care of weir gauge, 233, 234; key turned over to Millburn inspector, 235; gauge readings to be furnished Millburn, 243.

Dibble, F. J., bill for recording gauge dials, 71.

Discharge from various municipalities into Joint Sewer, March, 1905, 49.

Dorer, John, bid for Augusta Street sewer, 205.

Dorer, Michael, leakage on property, 337.

Dorer, M. D. & J., property, raising of manhole, 156; referred to Counsel, 161; report of Counsel, 164; manholes reported filled with stones, 306.

Drake, Mahlon S., suit for pollution of ice pond, analyses of water 233; Engineer authorized to have analyses made, 235; analyses reported by Engineer, 244; additional analyses needed, 266; continued postponement of suit noted, 271, 277, 280; verdict rendered for Drake, 289; judgment to be reviewed, 292; bill of Oscar W. Palmenburg, 303; verdict reduced by Supreme Court, 341.

Duncklee, John B., report on apparent leakage in South Orange, 63; correspondence regarding with Engineer, 63.

Du Vivier, E. H., bill for French gauge charts, 225; ordered paid, 226; bill for level recorder, 232; ordered paid, 235; bill for regraduating gauge, 244; paid, 245.

Earle & Dougherty, contractor Section 5, request for payment of retained three per cent., 19; letter of Counsel recommending payment, 29; payment ordered, 32; not to be paid, 52; payment recommended by Engineer, 59; payment objected to until streets are put in order, 60; payment ordered, 68; payment for replacing damaged manhole covers, 82; balance $100 ordered paid, 138.

East Orange storm sewer proposed, 197.

Ebert, Mr., matter of collecting Snyder bill from, referred to Counsel, 21; no permits to be issued to him, 21.

El Mora, annexation to Elizabeth a point in Roselle Park matter, 173; use of Roselle Park outlet, 441; question whether discharge chargeable to Elizabeth or Union Township quota, 449; referred to Counsel, 452.

El Mora Land Co., proposed agreement with Roselle Park, 225; to be submitted to Joint Meeting, 226, 228.

Election of officers, *see* Joint Meeting, election of officers.

Elizabeth, matter of deep cut connections referred to Counsel, 85; question of roof discharges into sewer, 147, 149; letter and reply, 162; attitude with reference to use of lower portion of sewer, 305; correspondence regarding, 307; correspondence regarding catch basins, 339; request de-

nied, 346; water supply no longer taken from streams near sewer, 344; connections made without notifying Joint Meeting, 450; Secretary to notify it must make proper notification, 452; use of upper portion of joint sewer for storm water, correspondence regarding, 438-441; discussion by Engineer, 441-443; report of inspection by Engineer, 444; voted that request of Elizabeth be refused, 445.

Elizabeth and Union Township sewerage capacity, 245, 246.

Elizabeth Pumping Station, question of connection referred to Counsel, 177.

Elizabeth River, crossing of Section 2, holes ordered filled, 66; analyses of water near Drake's pond, 244; proposed storm water relief along, 280; map, 283-284; estimate of quantities and cost, 285; change of course through Day farm, 337; retaining wall built, 338; erosion of branch near Joint Sewer, 362; work done to prevent further erosion, 363; need of watchman at crossing, 434; watchman authorized, 436.

Elizabethtown Water Co. need of painting of pipe across property, 206; bids ordered advertised, 208; bids received and contract awarded to J. P. Kernan, 215; payment on account of bill recommended, 225; balance ordered paid, 231; painting of exposed pipe ordered, 411; painting needed, 434; work authorized, 436.

Emergency fund voted placed with Secretary, 24.

Engineer of Joint Meeting, 1904-1915, Alexander Potter, III; elected, 74, 118, 145, 178, 202, 240, 269, 303, 347, 398, 456.

Engineer of Joint Meeting, correspondence with John B. Duncklee regarding South Orange leakage report, 63; preparation of history of the construction of Joint Trunk Sewer, 67; opinion on capacity of sewer and jurisdiction of Joint Meeting, etc., 73; letter regarding admission of South Orange Township to Joint Sewer, 86; letter transmitting statement of sizes of pipes, capacity, etc., at request of South Orange Village, 98; records to be open to examination by various towns interested, 105; salary reduction proposed by himself, 132; salary reduced, 145; assistant

for Augusta Street sewer, 206; to furnish records of flow, 1909 to 1913, 342; report on contributing flow of various municipalities 1905-1912, 347; tables with report, 350; tables for 1913, 378.

Engineer's regular reports to Joint Meeting, 1, 14, 22, 26, 35, 48, 59, 63, 71, 78, 84, 90, 104, 111, 119, 125, 130, 141, 146, 156, 165, 174, 180, 195, 199, 206, 216, 224, 228, 232, 241, 244, 248, 251, 266, 270, 280, 289, 296, 304, 311, 328, 332, 337, 343, 353, 360, 369, 375, 383, 395, 399, 410, 418, 432, 439, 448.

Excavations, uniform specifications for, 313-318.

Excessive flow, Engineer to report conditions in each municipality, 292.

Executive Committee, payment of members for attendance at meetings, 77.

Extension sewer work, lax methods noted, 292.

Fabyan Place, Newark, sewer, letter of Edward S. Rankin on overcharge, 367; referred to Engineer, 368; report of Engineer, 371; referred to Newark's Engineer of sewers, 373.

Fandango Mills connection granted, 13.

Fifteenth Avenue, Newark, question of draining pond into the Joint Sewer, 360; permission given to reopen drain, 366; report of Engineer, 372.

Financial statements, *see* Treasurer's reports.

Fiscal year defined, 74.

Flow of sewage in Joint Sewer, table showing data Oct., 1905, to March, 1906, 93; determination of flow, 115; table showing, 116; record at Summit line, March 17, 1908, 167; record near Fandango Mills, March 17, 1908, 167; record of main stem, March 17, 1908, 168; average daily flow of various municipalities, table for years 1905 to 1909, 226; flow records 1909 to 1913 ordered furnished by Engineer, 342; flow percentage ratio table, 1905 to 1912, 351; for 1913, 379; diagram showing relation between capacity and contributing flow, 352; flow of contributing municipalities 1905 to 1912, report of Engineer, 347; tables, 350; for 1913, 378; contributing flow of Newark-

Irvington branch, diagram, 355; average daily contributing flow 1914, 419; maximum weekly flow 1914, 419. (See also Tables of Flow.)

Flush tanks, uniform specifications for, 323.

Furniture selling reported, 18.

Fusco, Donato, bid on Lyons Avenue sewer, 119.

Gardner, Mr., barn rented for storage of materials, 29.

Gauge dials, bill for, 71.

Gauge, regraduating, bill for, 244; ordered paid, 245.

Gauges, question of purchase, 169; referred to Counsel, 178.

Gauges, recording, bill for, 141; question of purchase of new, with prices, 217; Richards' gauges ordered purchased. 221.

Gibby, Leroy A., application for position as Secretary, 454.

Grade change, manhole change due to, 86.

Greater Newark Associates, communication from, 204.

Grove Street, Irvington, sewer, break reported, 354; break repaired, 362; question of charging Irvington, 362; bill sent to Irvington, 366.

Hall, James P., contractor Section 4, retained 3 per cent. not to be paid, 52, 60; payment recommended, 66; payment ordered, 68; claims for extras, 95; referred to Counsel, 96; summons in suit and Counsel to defend, 108; correspondence regarding suit, 120; Engineer's report, 121; claim for crossing Manda property, 122; claim for D. L. & W. R. R. delay, 122; claim for Meadowbrook Lane restrictions, 122; adjustment of claims ordered paid, 123; amount retained in 1904 paid in 1914, 381.

Harrison Construction Co., contractor Section 2, retained percentage ordered paid, 23; payment again held up, 52; recommended by Engineer, 59; voted to be paid, 61; bid for Lyons Avenue sewer, 119; accepted, 123; completion of Lyons Avenue sewer, 125; payment ordered. 128; final payment made, 152; bid for Augusta Street sewer, 204; awarded contract, 205; balance on Augusta Street sewer ordered paid, 231.

Hayward, George W., extra inspector, pay, 17; appointed assistant inspector, 34; reappointed, 74; discharged, 127.

Henderson, Annie L., request to connect Fandango Mills with sewer granted, 13.

Henshaw Brothers, request for permission to connect with sewer, 83; granted, 94; payment for connection, 107.

Hilton district, report on proposed sewerage agreement between South Orange Township, Union Township and Irvington, 241; contract referred to Engineer and Counsel, 242.

Horse and wagon for Engineer, matter laid over, 29; question of purchase, 138; horse hire, 145; letter from Inspector Sandford, 154; horse maintenance ordered paid, 203.

Hose for flushing, purchase authorized, 18.

Hutmacher farm, Union Township, question of fee for connection and supervision, 434; inspection by Engineer authorized, 436; report of Engineer, 448; opinion of Union Township Counsel, 451; referred to Joint Meeting Counsel 452.

Inspections of sewer, 107, 155, 156, 203, 215.

Inspector, assistant, George W. Hayward appointed, 34, 74.

Inspector, assistant, Corey W. Sandford appointed, 202, 240, 269, 303.

Inspector, assistant, John J. Keating appointed, 336; telephone ordered for, 336.

Inspector, Chief, F. Ross Sandford appointed, 202, 240, 269, 303; directed to make his reports to Chief Engineer, 300; request for salary increase, 301; granted, 303; resolution on death of, 331.

Inspector, Chief, Corey W. Sandford appointed, 335; salary specified, 336; elected, 347, 398, 456.

Inspectors, pay of extra, 17; badges ordered for, 34.

Interest account balance transferred to maintenance account, 189.

Ippolito, Charles, bid for Lyons Avenue sewer, 119; charge for use of material, 121.

Irvington, cause of high flow into Joint Sewer, 49; total cost of sewer to town, 56; necessity of curtailment of flow of surface water, etc., 105; sewer on Augusta Street, 166;

condition of sewers reported by Engineer, 181; committee appointed to investigate, 184; report of committee, 185; report sent to municipalities, 187; report of engineering committee on odors on Augusta Street and Lincoln Place, 212; action on, 213; question of payment for raising of manhole, 252; bill sent to, for unpaid assessments of 1906, 277; question of duplicate sewer through, 296; letter sent to, regarding Engineer's report on sewer conditions, 308; storm water sewer reported well under way, 311; refusal to change plumbing code on account of Augusta Street odors, 353; sewer connections reported carelessly made, 359; proposed agreement with Newark and South Orange regarding sewer from Newark Almshouse, 376; use of capacity a matter for each municipality, 382; suggested conference with State Board of Health regarding sewer overflows, 395; committee appointed, 396; ventilation work reported satisfactory, 410; report of Bureau of Health on Augusta Street work, etc., 412; capacity of Joint Sewer used in 1914, 419; plans for relief sewer on Lyons Avenue, 422, 424; matter of unpaid assessments of June, 1906, 426; referred to Secretary to follow up, 427; overflow of sewers, report of Engineer, 433; report of committee, 446; expert assistance engaged, 446; committee on proposed contract for maintenance discharged, 454.

Irvington and South Orange Township, proposed agreement referred to Counsel, 242.

Irvington Board of Health notified of action concerning Augusta Street and Lincoln Place, 214; to be notified of meeting to consider Augusta Street matter, 327; attendance at meeting, 330.

Irvington Second Ward Improvement Association complaint of sewer odors, 306.

Joint Meeting minutes of maintenance period ordered reprinted, v; jurisdiction over Joint Trunk Sewer capacity, discharge, etc., 73; reorganization committee report 1907, 139; contract terms with municipalities for 1907-1917 suggested, 139; red report revision and reprinting, Engineer to report cost, 210; bids received, 214; awarded

to York Printing Co., 214; reported finished, 232; payment ordered, 235; Counsel to prepare legislation as to rights of intervention, regulation and supervision, 251; minutes to be revised and indexed, 456.

Joint Meeting Officers, 1904-1915, III; members, 1904-1915, IV; election of officers, 74, 118, 145, 178, 202, 240, 269, 303, 347, 398, 456; terms of officers and fiscal year defined, 74; office of Vice-Chairman created, 246.

Joint Sewer, general, itemized cost of each section, 9; assessments and cost of all branches, 11; maintenance assessments, *see* Assessment for maintenance: discharge into by various municipalities, March, 1905, 49; history of construction by Engineer, 67; cleaning of silt from, 71; opinion of Engineer on capacity, jurisdiction of Joint Meeting, etc., 73; table of average monthly flow at various points, 81; rule as to plans, size of pipe, etc., of connections, 82; flow reported less, 90; table showing data in relation to flow, October, 1905, to March, 1906, 93; capacities of various municipalities in various sections, 99; annual inspection, May 2, 1906, 107; determination of flow, 115; table showing flow, 116; record of daily discharge, April, 1907, 133; division of maintenance among municipalities, 140; inspection October 12, 1907, 155, 156; question of transference of capacity rights, 165; table of daily flow into from various municipalities, 1905 to 1909, 226; red report copies presented to Engineer, 235; opinion of Counsel asked on power to build lateral sewers in Summit and Millburn, 243; red report, old edition, Engineer to dispose of, 246; Counsel to prepare legislative bill on lateral and other connections, 247; report of Engineer on congestion along Elizabeth River valley, 280; storm water relief suggested, 280; map, 283-284; estimate of quantities and cost, 285; construction standards should be settled upon by constituent members, 300; Engineer directed to prepare standard specifications, 301; copy of uniform specifications as presented, 312; uniform excavation specifications, 313; flow records from 1909 to 1913 ordered, 342; tabulation of flow records 1905 to 1912, 350; for 1913, 378; flow of

contributing municipalities, 1905 to 1912, 347; tables, 350; for 1913, 378; diagram of capacity and contributing flow, 352; capacities of municipalities under their control, 382; supplemental maintenance cost contract submitted, 414; approved and referred to the various municipalities, 416; table showing average daily contributing flow for 1914, 419; table showing maximum weekly flow into Joint Sewer for 1914, 419; revision and reprinting of red report, committee appointed, 456.

Joint Sewer, Section 1, reported satisfactory by Engineer, 1; inspection report, 3.

Joint Sewer, Section 2, retained percentage ordered paid to contractor, 23; holes at Elizabeth River crossing ordered filled, 66.

Joint Sewer, Section 3, retained percentage ordered paid to contractor, 33; payment held up, 52; recommended by Engineer, 59; voted to be paid, 60; paid, 69.

Joint Sewer, Section 4, retained percentage not to be paid, 52, 60; payment recommended, 66; ordered paid, 68; letter of contractors' attorney regarding claims for extras, 95; referred to Counsel, 96; suit of contractor to be defended by Counsel, 108.

Joint Sewer, Section 5, inspection report, 3; request for payment of retained percentage, 19; payment ordered, 32; payment held up, 52; recommended by Engineer, 59; objected to until streets put in order, 60; payment ordered, 68; capacity of South Orange Village, 100; excess surface discharge into, 131; balance $100 paid contractors, 138.

Joint Sewer, Section 6, retained percentage not to be paid, 52; payment recommended by Engineer, 59; ordered paid, 61.

Joint Sewer, East Branch, AQT, statement of cost, 53.

Joint Sewer, Main Trunk, XA, statement of cost, 52.

Joint Sewer, West Branch, AB, statement of cost, 54; BI, statement of cost, 54; BKL, statement of cost, 55.

Keast Brothers, claim for damaged lawn, 67; arrangement for settlement, 80; settlement for damage ordered, 82; letter regarding delay in payment, 96; settlement ordered, 118.

Keating, John J., elected assistant inspector, 336; telephone ordered, 336.

Kernan, J. P., awarded contract for painting pipe on Elizabethtown Water Co. property, 215; payment on account ordered, 225, 226; payment of balance ordered, 231.

Kolesch & Co., bill for current meter, 71.

Korff Brothers, bill for large map, 232; ordered paid, 235.

Larney, B. E., purchase of trees from, 252; engaged to keep stream clear, 447.

Lateral extensions, water-tight construction urged, 271.

Lateral sewers in Millburn and Summit, opinion of Counsel asked, 243; Counsel to prepare legislative bill, 247.

Laurel Place, Vailsburg, breaks in sewer, 361.

Laws, collation and compilation ordered printed, 243.

Leakage, report on apparent, from South Orange Village, 61; Engineer's report on, 63; report of Engineer on leakage at various points, 84; leakage in Irvington reported, 337.

Legislation necessary, to cover lateral and other connections to be prepared by Counsel, 247; amendments to cover right of intervention, etc., to be prepared by Counsel, 251; advisability of additional legislation, committee appointed, 325; Engineer and Counsel to draft bills for safeguarding Joint Sewer system, 336; discharge of unobjectionable storm water excess into streams, 374; Assembly Bill No. 337, 1915, 428.

Level recorders, bill of Du Vivier, 232; ordered paid, 235.

Lincoln Place, Irvington, report of engineering committee on, 211; complaint concerning overflow referred to committee, 447. *See also* Augusta Street.

Lock manhole covers ordered purchased, 52; ordered of Sessions Foundry, 66 special machine work on, 71; reported placed, 80; report of Engineer on, 114.

Lugs on manhole buckets need lengthening, 3.

Lyons Avenue Sewer, inability of siphon to carry off water in heavy rains, 112; letter of Counsel on proposed change in Irvington, 117; tabulation of bids received for work, 119; bid of Harrison Construction Co. accepted, 123;

completion of work, 125; payment ordered, 128; assessment on municipalities ordered, 128; final payment, 152; storm water overflow noted, 200; refusal of State Board of Health to allow continuance of overflow, 290; order of State Board of Health to close opening under bridge, 333; opening reported sealed, 337; quantities of storm water discharged into, 400; Newark notified to remove cause, 402; plans for relief sewer in Irvington presented, 422.

McGraw Pub. Co. bill for history of Joint Trunk Sewer, 106.

Maintenance assessments. *See* Assessments for maintenance.

Maintenance of Joint Sewer, interpretation of statute, 34; proportionate share of municipalities, 76; detailed report of cost, June, 1905, to July, 1906, 117; percentage division among municipalities, 140; proposed new contract, 140, 156; revised plan for assessments proposed, 204; report of committee, 209; pro rata share of municipalities, 210; objection of Millburn Township to proposed readjustment, 238; referred to Counsel, 239; Chairman to prepare report on proper division of expenses, 269; readjustment of basis of cost again brought up, 374; recommended method of apportionment, 383; tables showing methods suggested at various times, 386; table showing distribution of cost 1913, 386; letter of Assistant Engineer Beyer discussing and recommending new basis of apportionment, 389; tables showing cost 1913 distributed according to sections and municipalities, 390; comparative statement of various methods of distribution, 391; correspondence of Engineer and Counsel, 391; Counsel authorized to draw up new contract with certain specified conditions, 397, 398; supplemental contract submitted, 414; approved and referred to the various municipalities, 416.

Manda property, claim of J. P. Hall for crossing, 122.

Manhole ordered on South Orange Avenue near Electric Park, 17;

Manhole repairs needed, 50; responsibility for raising manholes due to change of grade, 85, 86; uniform specifications, 322; replastered in Section 4, 399.

Manhole covers lower than grade on South Orange Avenue, 2, 3;

plugging of holes needed, 42; lock covers needed, 50; ordered purchased, 52; lock covers ordered of Sessions Foundry Co., 66; reported placed, 80; payment to Earle & Dougherty for replacing damaged covers, 82; removal of covers by persons prohibited, 85; Engineer to ask bids for manhole heads, 118; manhole cover perforations, 126; bill for lock covers, 126; purchase of ventilating covers in Irvington ratified, 201; inspector authorized to sell old manhole covers, 245; question of payment for raising covers, 252; additional purchase from Sessions Co. recommended, 306; purchase ordered, 308.

Maplewood, connection by South Orange Township into Joint Sewer at, 74.

Maplewood Field Club, objectionable manhole ordered replaced, 454.

Maps, lithograph, ordered for reprint of pamphlets, 215; bill of Korff Bros., 232; ordered paid, 235.

Mauchaur, Mr., application for 5-inch connection refused, 19.

Maybaum slaughter house, stench from, in Vailsburg sewer, 71; reported arrangement to prevent objectionable discharge, 80; discharge from, 146.

Meadowbrook Lane, repairs ordered made by contractor, 30; damage at, 66; letter regarding roadbed, 106; referred to Engineer, 108; report of Engineer, 113; settlement ordered, 117; claim of J. P. Hall on account of restrictions, 122; complaint regarding overflowing manholes, 421; report of Engineer, 432; matter to be taken up with Orange authorities, 435.

Meeting attendance, payment for, 145.

Membership of Joint Meeting, 1904-1915, iv.

Merrill, Oliver B., correspondence regarding Summit and the Roselle Park contract, 257.

Meter, current, purchase authorized, 52.

Meter station to measure South Orange Township flow, 346.

Millburn Avenue and Ridgewood Road, installment of manhole and gauge referred to Engineer, 455.

Millburn Sewer, bill for cleaning presented to Millburn, 52; use

by South Orange and West Orange, 156; referred to Counsel, 161.

Millburn Township, discharge into Joint Sewer cause of high flow, 49; to have detrimental discharge from Diamond Mills stopped, 52; total cost of sewer to, 57; disposal of some capacity to South Orange Township, 127; question of contract, 136; contract presented, 142; ratified and approved, 144; letter disapproving and declining execution of contract for readjustment of maintenance assessments, 238; referred to Counsel, 239; opinion of Counsel asked on power to build lateral sewer, 243; capacity of Joint Sewer used in 1914, 420; flow gauges ordered, 423; weirs installed to measure flow, 454.

Millburn-Summit Sewer, jointing material used, 299; report of examination by Engineer, 300.

Minutes of maintenance period ordered reprinted, v; revision and indexing committee appointed, 456.

Montrose Land Co. letter regarding condition of Meadowbrook Lane, 30; second letter, 106; referred to Engineer, 108; report of Engineer, 113; settlement ordered, 117.

Morris Turnpike Sewer, Millburn-Summit, report of examination by Engineer, 300.

Neafsey, Mr., request to make connection with Joint Sewer without inspection denied, 377.

New Jersey State Board of Health, notice from, 204; refusal to allow continuance of Lyons Avenue overflow, 290; order to close opening under Lyons Avenue bridge, 333; suggested conference with regarding Irvington, 395; committee appointed, 396; action to prevent pollution of waters by overflow and discharge of sewage, 402; hearing set for South Orange Township sewer extensions, 407; invited to attend inspection of Joint Sewer system, 448.

Newark, total cost of sewer to, 55; sewer trouble near Newark line probably caused by plumbing regulations, 79; necessity of curtailment of flow of surface water, etc., 105; lack of supervision of house connections to Joint Sewer, 114; low manhole at 19th Avenue and 20th Street, 131;

basis of Newark and Vailsburg payment considered, 134; discharge of surface water on 16th Avenue, 165; report of Engineer on 16th Avenue conditions, 182; report to be made to Board of Street and Water Commissioners on Augusta Street sewer, 202; letters of Engineer and Counsel on cost of Ocean Avenue sewer, 217; recommendation that municipalities arrange between them, 221; question of temporary connection at 16th Avenue and 20th Street, 267; storm water sewer planned, 298; storm water sewer started, 306; letter to Newark regarding Engineer's report of sewer conditions, 308; storm sewer construction interfering with Joint Sewer, 333; bill to be rendered for repairs to parallel sewer, 334; interference again noted, 354; question of treatment of Joint Sewer within Newark as other Newark sewers, 361; question of share of maintenance cost, 367; notified to remove cause of excess discharge of storm water into Lyons Avenue sewer, 402; notified to fill old manholes on Brookdale Avenue, 403; capacity of Joint Sewer used in 1914, 419; use of capacity discussed by Engineer, 434; referred to committee for study, 436; report of committee, 446; expert assistance engaged, 446.

Newark Almshouse, South Orange, proposed sewer from, 375; proposed agreement between Irvington and Newark, 376; opinion of Counsel, 376; use of capacity a matter for each municipality, 382.

Newark-Irvington branch, diagram of contributing flow, 355.

Notary public, Secretary to be, 170.

Ocean Avenue, Vailsburg, sewer, division of assessment for cost, 207; referred to Counsel, 208; correspondence of Engineer and Counsel, 217; question of payment for construction, Newark, Irvington and South Orange Village, 216; recommended that municipalities arrange between them, 221.

Officers, election of, 74, 118, 145, 178, 202, 240, 269, 303, 347, 398, 456.

Officers 1904-1915, III.

Officers, salaries 1907, 145; terms, 74.

Orange National Bank requested to transfer funds from William Rollinson to S. H. Rollinson, 265, 427.

Orange Sewer, continued excess of flow reported, 363.

Palmenberg Oscar W., bill for analyses of Elizabeth River water paid, 245; bill for expert services, 303; pro rata shares to be sent to Newark, Irvington and South Orange, 303; bill for Drake case testimony reported unpaid, 426; Secretary to send bills to Irvington, Newark and South Orange, 427.

Pay for laborers, emergency fund for, 24.

Payroll voucher form suggested by accountant, 276, 277.

Phraner, Francis S., Treasurer, final report, 9; release of surety company, 13.

Pierson Road, South Orange application to connect at, 233, 234; referred to Engineer, 235; report of Engineer, 248.

Pipe, cast iron, uniform specifications for, 325.

Pipe laying, uniform specifications for, 319.

Pipe, vitrified, uniform specifications for, 318.

Plumbing rules, enforcement needed on 19th Avenue, Newark, 2; amendments needed in the various municipalities, 187; municipalities requested to change plumbing laws, 213.

Population of towns tributary to Joint Sewer, 1898 and 1915, 443.

Potter, Alexander, Engineer, 1904-1915, III; elected Engineer, 74, 118, 145, 178, 202, 240, 269, 303, 347, 398, 456. *See* references under heading Engineer.

Public Service Corporation, bill for stoppage of Springfield Avenue sewer, 399, 401.

Queen & Co. question of gauges not returned referred to Counsel, 178; bill for charts, 232.

Rahway River crossing South Orange Avenue, water main, 3; painting of pipe crossing, 17; accumulation of sand removed, 91; care of crossing, 434.

Rahway River, East Branch, complaint of condition of grade, 31.

Rankin, Edward S., letter regarding Vailsburg drainage scheme. 266; conference regarding Newark storm sewers, 333; letter regarding repairs to Valley Street sewer, 338; letter on Fabyan Place and Lyons Avenue sewer, New-

ark's share in maintenance cost and Vailsburg sewers, 367; letter regarding South Orange Avenue sewer, etc., 385; engaged as expert in Newark and Irvington excessive flow question, 446; elected Secretary 1915, 456.

Recording gauge charts, bill for, 113; bill for dials, 71.

Recording gauges, question of purchase from Queen & Co., 148.

Records of Engineer open to examination by various towns interested, 105.

Records of flow, 1909 to 1913, ordered furnished by Engineer, 342.

Reorganization Committee, 1907, report, 139.

Reward offered for arrest and conviction of persons injuring sewer, 74.

Richards' Bros. gauges ordered purchased, 221.

Riker, Adrian, Counsel, 1904-1915, III; elected, 74, 118, 145, 178, 202, 240, 269, 303, 347, 398, 456.

Rock-cut foundations, uniform specifications for, 324.

Rollinson, Simeon H., Treasurer 1907-1915, III; elected, 125, 145, 178, 202, 240, 269, 303, 347, 398, 456; bond accepted, 127.

Rollinson, William, Treasurer 1904-1906, III; resignation, 124; bank requested to transfer account, 265, 427.

Roof connections, notices to terminate, 417.

Rope for cleaning sewers, purchase authorized, 303.

Roselle Park Borough, request concerning increase of capacity, 14; laid over, 17; application referred to Engineer, 20; report of Engineer, 27; contract authorized granting increase of capacity, 41; contract to be adopted by each municipality, 41; copy of communication sent by Secretary to each municipality, 43; unsettled condition of negotiations reported by Engineer, 116; committee appointed to consult with regarding additional capacity, 118; to be charged for excess discharge, 120; amount of excess discharge, 126; purchase price for excess capacity, 127; weir ordered placed, 127; record of excess capacity used, 130; bill to be sent for excess discharge, 138; recording gauge for, 148; price of gauge, 149; bill for weir gauge, 161; excess discharge reported, 160; referred to Counsel, 161; report of Counsel and notice to get

within capacity, 164; record of flow, 169; special meeting on question of excess use, 171; schedule of excess, 172; matter laid over, 174; report of Engineer, 180; committee appointed to consider with Roselle Park its purchase of additional capacity, 183; full proposition made by Roselle Park, 190; proposition rejected, 192; copy of letter sent by Secretary, 193; status of matter in October, 1909, 219; agreement to accept terms of Joint Meeting, 225; ordinance to make supplemental contract with Joint Meeting, 228; terms of contract, 230; accepted, 231; interest and expense of sewerage treatment not included in contract, 236; proposed form to include these, 236; errors in ordinance and contract referred to Counsel, 246; report of Engineer on contract, 248; committee appointed to negotiate for settlement of differences, 249; report of special committee, 253; ordinance and contract submitted, 253; presented at Joint Meeting and accepted, 256; objection of Summit to terms, 257; correspondence between Chairman of Joint Meeting and O. B. Merrill of Summit, 257; copy of Engineer's report sent to municipalities, 265; agreement of all municipalities reported, 270; table showing division of payment among municipalities, 271; agreement executed, 278; acceptance of contract terms reported, 280; notice to Roselle Park that payment on contract with interest is due, 285; request to omit or reduce interest item, 288; Engineer reports no replies to letters, 312; promised check reported not received, 325; subdivision of proceeds among municipalities, 328; warrants issued to the several municipalities, 330.

Rules and regulations, collation and compilation ordered printed, 243; copies divided among municipalities, 265.

St. Mary's Orphan Asylum, application for connections larger than in rules, 19.

Salaries, officers, for 1907, 145.

Salary, Engineer's, proposed reduction, 132; reduction made, 145.

Salary, Inspector's, request for increase, 301; increase allowed, 303.

Salary, Secretary's and Treasurer's, increase made, 303.

Salary warrants authorized without action of Joint Meeting, 18; action on lost warrants, 329.

Sandford, Corey W., appointed Assistant Inspector, 177; elected, 202, 240, 269, 303; recommended for Chief Inspector, 332; elected Chief Inspector, 335, 347, 398, 456; salary, 301, 303, 336; injured, 305.

Sandford, F. Ross, reappointed Chief Inspector, 74, 178, 202, 240, 269, 303; letter on cost of horse hire, 154; motion of appreciation, 238; telephone bill paid in full, 249; accident and refund of expenses, 278; request for salary increase, 301; increase allowed, 303; resolutions on his death, 331.

Schanz & Koehler, violation of rules of Joint Meeting, 298.

Second Ward Improvement Association, Irvington, letter regarding Augusta Street sewer odors, 237.

Secretary, Edward D. Tuttle, 145; Arthur Tepper, 151, 178, 202, 240, 269, 303, 347, 398; Edward S. Rankin, 456.

Secretary, audit of accounts 1904-1911, 274; office rent reimbursed, 77; office secured and rental, 77; appointed notary public, 170; office removed from Irvington to Summit, 293; increase of salary, 303; removal of safe and other property authorized, 456.

Sessions Foundry Co., manhole lock covers ordered, 66.

Settling basins, Engineer to study and report on, 345, 355.

Seven Bridges Road, painting of pipe recommended, 206; advertisement for bids ordered, 208.

Sewage discharge, action of State Board of Health regarding, 402.

Sewer connections, Assembly Bill No. 337, 1915, allowing, 428.

Sewer gas odors, recommendations for eliminating, 187; report on, 211; removal of traps recommended, 213.

Sewer rods, question of purchase of new, 159; ordered, 161.

Sewer specifications, necessity for rigid, to secure tight sewers, 299.

Shea, T. J., contractor Section 1, retained percentage recommended paid, 1; ordered paid, 4.

Silance, Milton R., application for position as Secretary, 454.

Silt accumulations in sewers, 51; cleaned from certain sections, 71.

Smithers, E. L., Vice-Chairman 1913-1915, III; elected, 342, 347, 398.

Snyder, Frank, claim for repairs to sewer connection referred to Counsel, 17; ordered paid, 21.

Solway Hydraulic paint to be used in painting pipe, 215.

South Orange Avenue sewer, manhole covers lower than grade, 2, 3; manhole ordered near Electric Park, 17; stoppage near Halstead Street reported by Engineer, 92; question of adequacy, 133, 135; letter of E. S. Rankin regarding, 385; opinion of Engineer cost should be borne by Newark, 385; referred to Counsel, 393; reported rebuilt from Halstead Street, 418.

South Orange Township, connection into Joint Sewer at Maplewood authorized, 74; report of Engineer on sewer connections in, 79; Engineer instructed to consult with in order to have plans conform with Joint Meeting, 82; letter asking information on matter of admission to Joint Sewer, 86; letter requesting information as to original percentage of capacity, etc., 100; reply of Chairman of Joint Meeting, 101; acknowledgment of reply, 104; taking some of Millburn's capacity, 127; question of contract, 136; contract presented, 142; ratified and approved, 144; agreement with South Orange Village for certain taps, ratified and approved, 144; sewerage system started, 148; sewers reported constructed, 175; matter of additional capacity, 207; purchase of capacity from Millburn and offers to Summit, etc., 221; reported agreement with Union Township and Irvington regarding sewerage in Hilton district, 241; referred to Engineer and Counsel, 242; application to connect at Pierson Road and Stuyvesant Avenue, 233, 234; referred to Engineer, 235; report of Engineer, 248; application to connect west of Rahway River, 295; referred to Engineer, 296; jointing material used, 299; application to connect near Rahway River, 311; meter station to measure flow, 346; asked to construct weir manholes, 363; referred to members from South Orange Village and Millburn, 367; sewer from Newark Almshouse, 375; proposed agreement between Irvington and

Newark, 376; referred to Counsel, 376; use of capacity a matter for each municipality, 382; correspondence of E. R. Halsey on proposed sewer extension, 395; correspondence with State Board of Health on proposed new sewers, 405; weirs installed to measure flow, 454.

South Orange Village, discharge into Joint Sewer at its limit, 49; total cost of sewer, 56; report from on apparent leakage, 61; Engineer's report, 63; report of Engineer on sewer connections, 79; capacity considered in matter of South Orange Township admission, 88; resolution requesting statement of capacity owned and reports of flow, 94; resolution requesting information on sizes of pipes, etc., 95; Engineer directed to furnish, 95; letter transmitting sizes of pipes, capacity of all municipalities, etc., 98; capacity in Section 5 of Joint Sewer, 100; letter requesting information as to original percentage, capacity, etc., 109; reply of Chairman of Joint Meeting, 109; recreation park toilet, 138; agreement with South Orange Township for certain number of taps ratified and approved, 144; capacity of Joint Sewer used in 1914, 420.

Specifications, standard, to be prepared by Engineer, 301; copy of uniform specifications as presented, 312-325.

Speir, Francis, Chairman of Joint Meeting, 1904-1915, III; elected, 74, 118, 145, 178, 202, 240, 269, 303, 347, 398, 456.

Springfield Avenue, Irvington, sewer stoppage reported caused by Public Service Corporation, 399; bill sent to it, 401.

Springfield Township, resolution setting price for tap connections, 94.

Stainsby, William C., report of audit of Treasurer's accounts, 6; bill for audit laid over, 13.

Staten Island Sound, no deleterious effects of discharge into, 66, 90; condition at outlet reported, 272.

Stiles, John W., change of construction of sewer on property, 195, 197.

Stiles Brook crossing, matter of proposed change, 199, 201.

Stoppage of sewer at various points reported by Engineer, 92.

Stop-watch, purchase for inspector authorized, 327.

Storage place for materials, 29.

Storage tanks necessary, 344.

Storm water sewer, Newark, interference with Joint Sewer, 354; sewers in Irvington and Vailsburg, 344.

Storm water overflow, examinations by Engineer Wrigley, 291; legislation necessary on the matter of excess discharge into streams, 374.

Stuyvesant Avenue, Irvington, reinforcement of sewer near, 411.

Stuyvesant Avenue, South Orange, application to connect at, 233, 234; referred to Engineer, 235.

Summit, total cost of sewer to, 57; power to build lateral sewer referred to Counsel, 243; objection to Roselle Park contract, 257; capacity of Joint Sewer used in 1914, 420.

Summit sewer, use made of Joint Sewer, 81; use by South Orange and West Orange, 156; referred to Counsel, 161.

Suspense account ordered charged off, 286.

Tables of flow, 49, 81, 93, 116, 133, 172, 226, 350, 378, 419.

T-branches, uniform specifications for, 324.

Tapping without permits reported and referred to Engineer, 5.

Taps and connections, rights of municipalities, 177.

Taylor, C. C., audit of Secretary's and Treasurer's accounts, 1904-1911, 274; report of closing of construction account, 285; engaged to audit books, 1914, 398; audit of books, 1911-1914, 426.

Taylor, Lewis P., land needed to adjust Whittingham damages, 4.

Telephone bill of Inspector Sandford paid in full, 249.

Tepper, Arthur, Secretary of Joint Meeting, 1907-1915, III; elected, 151, 178, 202, 240, 269, 303, 347, 398.

Tillou, S. B., complaint of condition of grade of Rahway River, East Branch, 31.

Traps, removal of intercepting recommended, 187; letter sent to all municipalities, 194; abolishment of, letter sent to Irvington Board of Health, 223; ventilation and elimination of, 213.

Treasurer of Joint Meeting, F. S. Phraner, final report, 9.

Treasurer of Joint Meeting, William Rollinson elected, 74, 118; resignation, 124.

Treasurer of Joint Meeting, Simeon H. Rollinson elected, 125, 145, 178, 202, 240, 269, 303, 347, 398, 456; bond accepted, 127.

Treasurer, bond referred to Counsel, 5; audit of accounts, 6; trial balance 1904, 12; audit, 125; return premium on bond, 127; audit, 145, 177; to be present and report at each meeting, 256; direction as to preparation of reports and inclusion in minutes, 265; transfer of funds, 265; audit 1904-1911, 274; to report assessments paid and outstanding at each meeting, 287; increase of salary, 303.

Treasurer's reports details of amounts on deposit, etc., 272, 286, 292, 295, 308, 325, 329, 334, 342, 345, 356, 364, 379, 403, 413, 424, 437, 445, 453.

Trees planted on sewer right of way, owner to transplant, 346.

Trolley tracks on Bayway necessitate strengthening of sewer, 339; letter of Counsel, 340; committee appointed to consider matter, 341; tracks supported by Public Service, 344.

Tunnel, report of Engineer, 113.

Tuttle, E. D., Secretary of Joint Meeting 1904-1907, III; resignation, 151.

Union Avenue, trouble with tree roots, 252; Engineer to prepare plans and advertise for bids for relief sewer, 292; complaints of overflow near, 427.

Union Township, excess of capacity used by Roselle Park, 130; request certain sewer connections, 141; request for lateral sewers, Floral and Emerson Avenues, 147; conditions of permission, 149; use of capacity to be reported by Engineer, 235; report of Engineer, 241; proposed agreement with South Orange Township referred to Counsel, 242; sewerage capacity of Township and Elizabeth, 245, 246; question of payment for excess discharge, 435; Engineer authorized to determine flow, 436; discussion of sewer connections by Engineer, 448; opinion of Union Township counsel, 451; referred to Counsel, 452.

Union Township, Board of Education, Engineer's recommendation as to certain work concurred in, 245.

Vailsburg, matter of extension laid over, 17; annexed to Newark, 35; total cost of sewer to, 55; report on conditions arising from Maybaum slaughter house, 71; lack of supervision of house connections, 114; report on storm sewers, 159; question of discharge from house leaders, 166; trouble caused by discharge of rain water into sewers, 196, 197; trouble with Brookdale Avenue sewer, 200; matter left to Engineer, 201; delay in drainage scheme, 266; storm water sewer planned, 298; storm water sewer well under way, 311; question of turning portion of Joint Trunk Sewer over to Newark, 368; referred to Counsel, 368; correspondence between Engineer and Counsel, 370; opinion of Counsel, 371.

Vailsburg and Newark, basis of maintenance payments considered, 134.

Vailsburg Improvement Association, letter regarding South Orange Avenue sewer capacity, 135.

Valley Street repairs, charge for, 338.

Vice-Chairman, office created, 246; A. R. Denman elected, 247, 269, 303, 456; E. L. Smithers elected, 347, 398.

Violations of rules of Joint Meeting, 298; report of Engineer, 304.

Vitrified pipe, uniform specifications for, 318.

Waclark Wire Co. discoloration of discharge from, 159.

Wagon, purchase ordered for inspector, 203.

Warrant book, purchase of new ordered, 195.

Warrants for Engineers' and inspectors' salaries lost, action taken, 329.

Waste water, entrance into sewer, 296.

Water pollution by sewage discharge, action taken by State Board of Health, 402.

Water-tight sewers urged in lateral extensions, 271.

Watson, Mrs. Emma H., claim for damage to house, 33.

Weekly contributing flow, maximum during 1905 to 1912, 350; in 1913, 378.

Weir gauge readings, No. 60, on Bayway, 1907 and 1910, 237.

Weir manholes, South Orange Township asked to construct, 363;

matter referred to South Orange Village and Millburn members, 367.

Welcher, extra inspector, pay, 17.

Weppler, Conrad, letter regarding contamination of spring, 92; examination of spring water to be made, 93; offer of settlement referred to Counsel, 145, 149; compromise offered, 149; report of Engineer, 157; claim not to be paid, 161; reconsideration and settlement ordered on advice of Counsel, 165; investigation as to condition stopped by him, 166; case reported settled, 171.

West Orange, total cost of sewer to, 56; question of exchange of capacity with Orange, 236; voted to allow for five years, 236; excess of flow reported from Orange sewer, 363; matter referred to West Orange member, 367; capacity of Joint Sewer used in 1914, 420; discharge into sewer of dye refuse and factory wastes, 421; Orange requested to remedy, 424; letter from Orange Director of Streets, 447.

West Street, Vailsburg, sewer referred to Newark Board of Works, 201.

Whittingham, W. C., claim for damages, agreement to settle, 3; progress reported, 13; work reported completed, 20; roadway across property, 51; colt killed in unfilled excavation, 183; work ordered to prevent future accidents, 184.

Winkler, Hugo, claim referred to Engineer, 5.

Woodruff, J. R., settlement with, 18.

York Printing Co. awarded contract for reprinting Joint Sewer pamphlet, 214; missing cuts for reprint of red report, 232; payment for report ordered, 235.

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